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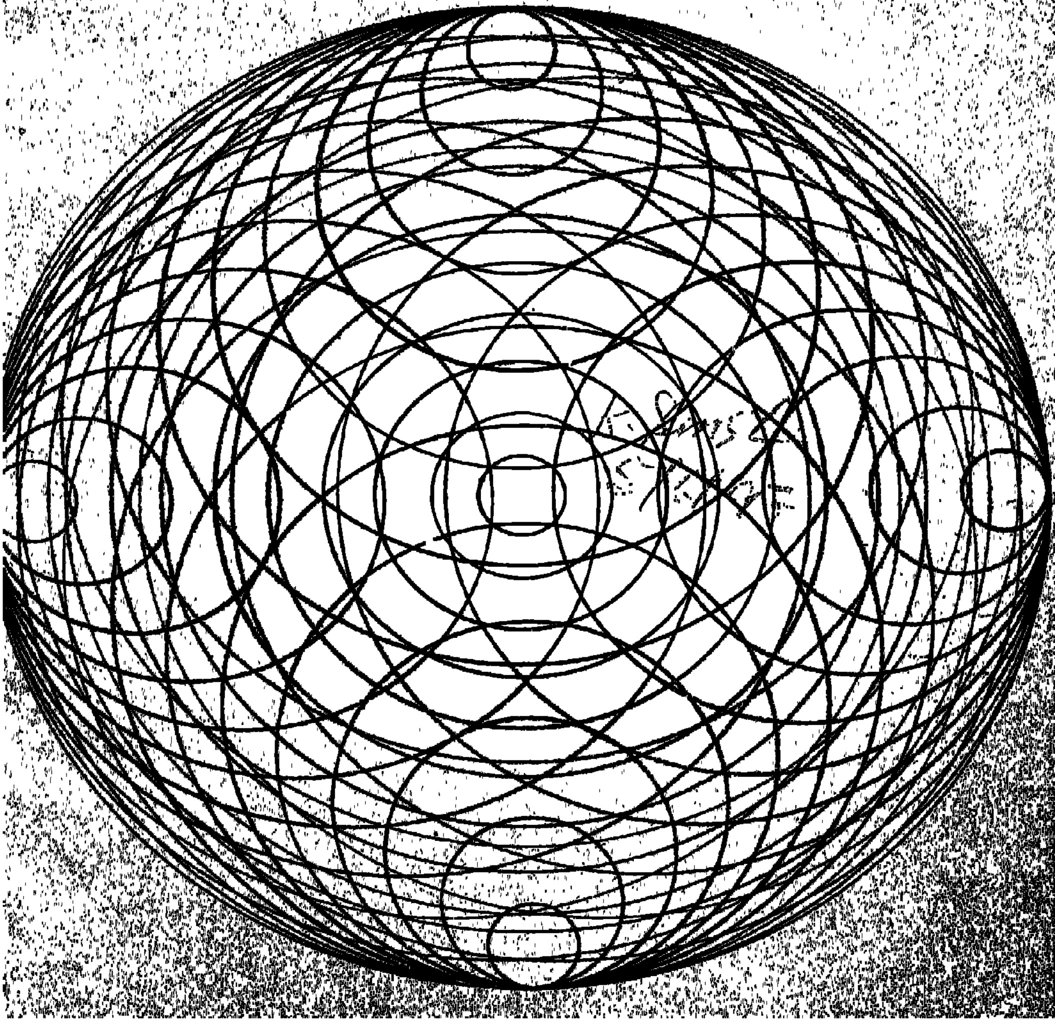

The Primary Teacher is a quarterly brought out by the National Council of Educational Research and Training (NCERT), New Delhi. The Journal intends to give the practising teachers and concerned administrators, authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc. offered at various centres in India from time to time. It also provides a forum for the discussion of contemporary issues in the field of education.

The major features of **The Primary Teacher** are

- ☐ Educational policies concerning primary education
- ☐ Questions and answers
- ☐ States round-up
- ☐ Illustrated material for classroom use.

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Editorial

THE National Policy on Education 1986 (Revised 1992) brought in a major breakthrough in revitalizing education at all stages. The Policy made significant recommendations to revamp primary education—it emphasised decentralization of planning and management of primary education to make it relevant To translate policy enunciation into a reality, major initiatives were undertaken Launching of District Primary Education Programme along with many other innovations was an important step The article 'Revitalizing Management of Primary Education in Orissa', discusses the various issues related to policy planning and implementation and suggests some practical steps to realize the goals Bringing all children into the fold of primary education poses a great challenge for providing education to the disabled. In the article 'Structured Integration· An Experiment', the authors share their experience of integrated education of the disabled, the lessons learnt by a voluntary agency, Amar Jyoti, has been discussed Amar Jyoti has attempted a programme of structured integration where a comprehensive assessment of children, viz. psycho-assessment, academic assessment, medical assessment and socio-assessment of each pupil were undertaken and only then necessary inputs were given by structured intervention

Education of the tribal children is another vital area of intervention A tribal child starts schooling with substantial disadvantage, especially his/her deficiency in verbal skills. Absence of early stimulation leads to cumulative deficiency at a later stage. The article 'Cognitive Deficiency of Tribal Children', throws light on this vital issue and suggests steps to deal with it For optimal mental, emotional and physical growth of children programmes of early childhood and care need proper planning. A conducive environment in a play group helps in the overall development of a child. It taps the hidden talent of a child and unfolds the child's potential Early stimulation has far-reaching implications in later life In her article 'Meeting Children's Need through Play', the author has shared her personal experiences of

A tribal child starts schooling with substantial disadvantage, especially his/her deficiency in verbal skills. Absence of early stimulation leads to cumulative deficiency at a later stage.

organizing play groups The article contains some interesting activities.

'Education of Children with Hearing Impairment', is a piece of action research on the effect of modified instructional materials and methods on pupils with hearing impairment The pupils of special school and integrated school were exposed to the modified materials and methods to find out their efficacy.

Of the many innovative programmes for qualitative improvement of content and process of primary education, 'Shikshak Samakhya' deserves special mention The article, 'Achievement of Class I Pupils in Language and Mathematics' is yet another piece of action research The samples were taken from schools of Patan and Katni blocks of Madhya Pradesh. The results indicate that children did not master simple basic skills in Mathematics and Hindi.

Sex stereotyping of a girl child is under evaluation Often such attitudes get reflected in the illustrative examples given in the textbook. This results in perpetuation of such attitudes in young children. To remove gender bias from the textbooks is a major area of concern to bring about gender-equality and remove sex stereotyping In the article 'Promoting Gender Equality through Textbooks', the author discusses in detail the guidelines given for removing gender bias in textbooks.

The 'Games Section' contains some interesting games for the teachers to try these out in the classrooms

ACADEMIC EDITOR

Revitalising Management of Primary Education in Orissa

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The National Policy on Education 1986 (Revised 1992) emphasises the importance of decentralisation in planning and management of education, especially, at the primary level by ensuring the community participation In order to translate this idea into reality, the government took initiatives by launching programmes, such as, District Primary Education Programme (DPEP) Area Intensive Education Project (AIEP) for human resource development, Lok Jumbish and amending the historic constitution of the land. Despite all these initiatives, it has not yet been possible in Orissa to revamp the supervision of primary education The main reason for this state of affair has been the centralisation of power with state level administration From the point of view of democratic decentralisation it is important that local communities should manage their own affairs, to the extent possible, relating to the basic aspects like agriculture, health, family welfare including primary education of their children In view of the emerging issues in the management of primary education and capacity of local bodies in the State of Orissa, necessary reforms in respect of some vital aspects of management, e.g. planning, supervision, resource mobilisation and resource management have been suggested.

The main function of VEC, as suggested by NPE and POA, are generation and sustenance of awareness among the village community ensuring participation of all segments of population and developing teacher/instructor and community partnership.

THE National Policy on Education (NPE) 1986 (Revised 1992) emphasised the importance of decentralisation in planning and management of education at all levels by ensuring the community participation. It advocated establishment of the District Board of Education which would manage education up to higher secondary level. The policy lays down that "the local committees through appropriate bodies will be assigned a major role in programme of school improvement" (NPE, 1986)

The Programme of Action (HRD, 1986) postulated that "The District Board will also be vested with the responsibility for planning which would include, inter alia, area development, spatial planning, institutional planning, administrative and financial control and personnel management with respect to primary, middle, secondary and higher secondary schools." The Programme of Action (POA) also suggested establishment of a Village Education Committee (VEC) in each village Panchayat The main function of VEC, as suggested by NPE and POA, are generation and sustenance of awareness among the village community ensuring participation of all segments of population and developing teacher/instructor and community partnership to oversee and manage the effective and regular functioning of schools and centres

Emerging Initiatives

In order to translate the ideas relating to reorganisation and revitalisation of school education envisaged in NPE and POA (1986), into action, the government took initiatives by launching programmes, such as, District Primary Education Programme (DPEP), based on many earlier experiences including Lok Jumbish and amending the constitution of the land (73rd Amendment—Panchayati Raj) In the present section of this paper only the agenda of reforms and management approaches envisaged in DPEP, AIEP and 73rd Constitutional amendment have been highlighted It is felt that these initiatives are important for revitalising management of primary education for the State of Orissa

The basic idea behind the DPEP is to put local communities in charge of the education in their areas and enhance investment in primary education The main thrust under DPEP are (i) district level planning, (ii) community participation and decentralised management; (iii) focus on education for girls, scheduled castes and scheduled tribes; (iv) improving effectiveness of education through training of teachers, improvement of learning materials and upgrading of infrastructure facilities. One of the major objectives of DPEP is achievement of MLL through effective decentralised school management, improved infrastructural facilities, recurrent and regular upgrading of teachers' skills, etc

Area Intensive Education Project (AIEP) for human resource development seeks to eliminate educational inequalities in the country and, therefore, demands a number of innovative approaches and steps with sufficient flexibility in adopting them to suit the local needs and environment. Some of the thrust areas of AIEP are· area-specific and population-specific approach, integration of pre-school, primary education, non-formal and adult learning in the community; convergence of socio-economic developmental inputs of the State and Central Government, identification of educational and developmental needs of the communities; development and implementation of micro level village plan; inter-sectoral coordination at various levels and involving communities as co-partner at all stages.

The 73rd and 74th Constitutional Amendment Acts mark a new era in the democratic decentralisation in India. The 73rd Constitutional Amendment Act, 1992, envisages states to establish a three-tier system of Panchayats at the village, intermediate and district levels. Similarly, the 74th Constitutional Amendment Act 1992, envisages establishment of municipalities in the urban area In pursuance of these acts, the states are expected to devolve adequate powers, responsibilities and finances upon these bodies so as to enable them to prepare plans and implement the schemes for economic development and social justice. Through these acts a list of items has been placed in the 11th and 12th schedules of the constitution which fall within the purview of the local bodies In accordance with the 73rd Constitutional amendment and the Eleventh Schedule, education including primary and secondary schools, technical training and vocational education, and adult and non-formal education are included in the subjects that may be transferred to the Panchayati Raj bodies as part of the decentralized set-up to be established at the village, intermediate and district levels Under the Act, provisions under Eleventh Schedule are not mandatory, giving enough flexibility to the states to take decision based on their prevailing situation The overall philosophy for empowering Panchayati Raj bodies was based on the general belief that development of rural areas can be best achieved by entrusting the local people the responsibility of managing their own affairs In the light of the above, let us examine the educational scenario in Orissa.

Issues in Management

At present the fundamental aspects of management of primary education, such as, preparing curriculum and related instructional materials, deciding the content and process of education, supervision of schools, etc is controlled by state level agencies Although the supervisory function is carried out by the Block Education Officer (BEO), it is seen that his function as a supervisor of primary education is not exclusive Like other extension officers working at the block level—Social Education Officer (SEO), Fishery Extension Officer (FEO), Welfare Extension Officer (WEO), Gram Panchayat Extension Officer (GPEO), etc —BEO in addition to his role as a supervisor of primary education, is engaged in implementation of various anti-poverty programmes launched by the State and Central Government from time to time It is in fact seen that BEO's function as supervisor of primary education becomes secondary. Village Education Committee (VEC) although has been restructured recently, plays a very little role in enhancing the quality of primary education. Further, the intervention of state level administration in the management system of education in general and primary education in particular is immense It is due to the centralisation of vast power with state level administration (Secretaries and Directors), which indirectly controls all the aspects of education. Sometimes it takes education of the state beyond the framework prescribed at the national level bodies To make the planning and Management of primary education more realistic it should have local relevance This can be achieved by resorting to decentralization which would reduce the power and functions of state level administration substantially and vest these with the bodies at the lower levels of administration, such as, district, block and village level judiciously. The main function of the state level administration should be that of coordination, i.e. to rightly communicate the national programmes and policies, to the local level and to monitor, review and evaluate the programmes without distortion.

Effective Structures

As is evident from the earlier section in this paper several attempts have been made to decentralise the management of schools and entrust it to local bodies. From purely educational point of view, it is not important as to who manages the schools but what really matters is how effectively the schools are managed, especially, the quality of education and the achievement levels of the students. From the point of view of democratic decentralisation, it is also important that local communities manage their own affairs to the extent possible and deal with subjects, such as, agriculture, health, family welfare and education.

Some educationists and administrators advocate a cautious approach with regard to powers to be vested in the Panchayati Raj bodies for management of education. They cite many examples of irregularities and misuse of powers by the elected representatives. It has also been suggested to ensure 'capacity building' of the lower level Panchayati Raj bodies. The Panchayati Raj bodies would need to be adequately supported and strengthened before giving them additional responsibilities.

Keeping in view the emerging issues in the management of primary education and capacity of the Panchayati Raj bodies at the grassroot level, some reforms in respect of vital aspects of management are suggested here. The details in these respects are given below.

(i) *Planning.* Decentralisation in planning, i.e. planning at various levels—district, village, institution—at any cost must be ensured. The thrust points of decentralised planning should be: (a) area-specific and population-specific approach, (b) linking educational planning to the socio-economic developmental needs of all sections of the population, (c) integrated planning approach, i.e. planning for primary education, pre-primary education, adult and non-formal education in one platform, (d) people's participation at all stages of planning and implementation, (e) micro level planning which follows the steps such as identification of needs, resources available, matching needs and resources, prioritisation of needs, detailed programmes for utilising resources, (f) highest priority in planning perspective be given to those blocks which are educationally and socio-economically backward, (g) highest priority to provide equal educational opportunities for those who have been most deprived.

(ii) *Supervision.* Steps should be taken to save supervisory activity of primary education from dilution, i.e. supervision of primary schools should be the exclusive function of the BEO. In view of the large-scale teachers' absenteeism in primary schools situated in remote areas, supervision should be done at two levels—at the block level by BEO and at the state level by a moving squad. At both the levels supervisory activities must be task-centred and person-centred.

(iii) *Resource Mobilisation.* For qualitative and quantitative improvement of primary education resource mobilisation—both human and financial—and proper management of the resources for optimising their effectiveness is required. As has been proposed in NPE 1986, 1992, resources to the extent possible should be raised by mobilising donations, asking the beneficiary community to maintain school building and supplies of some consumables and raising fees at the higher levels of education. It is obvious then that when the resource base becomes wide the control tends to become less over resources Hence for the achievement of effectiveness, control should be decentralised. The agency at the helm of affairs should be willing to give certain amount of control to those working at various levels for the achievement of the goal However, the power of management of resources allotted for the improvement of quality of primary education should mostly be vested on the district level body whereas the management of resources relating to construction of building, purchase of equipments, etc should be vested in the VEC The basic principle that should govern the exercise of distributing power and functions between higher and lower level bodies is that "in acting as units of self-government, Panchayati Raj institutions will undertake responsibility which they can discharge within the framework of their resources and requirements It would mean that what the Panchayat cannot undertake will be accomplished by the Samiti and what Samiti cannot do by itself will be undertaken by the Zilla Parishad Thus only residual functions will be transferred to the next larger units" In order to operationalize this principle it is necessary to take certain decisions relating to the policy, planning, financing and management/administrative aspects of the programmes.

(iv) *Monitoring and Evaluation* Monitoring refers to whether objectives have been achieved so that corrective actions could be taken if necessary Monitoring should be done by the state level agencies. It should be both target-oriented and process-oriented Periodic evaluation of primary education programmes should also be done by state level agencies with the help of external agencies

(v) *Recruitment of Teachers* Recruitment is an important instrument of quality control on human input to the education system. Uniform policies in recruitment of primary teachers should be followed. It is seen that the objective of recruitment of primary school teachers at present has been degenerated into an activity of providing employment to local youths. District level bodies have been empowered to fix their own criteria for selection of primary school teacher. Keeping in view the non-availability of trained manpower, teacher training qualification is very often compromised in backward districts. It is suggested here that recruitment of teachers should be done at the state level and quality criteria should not be compromised at any cost The minimum qualification prescribed by the National Council for Teacher Education (NCTE) should be strictly adhered to in the matters of both recruitment of teachers and selection of pupil teachers for Elementary Teacher Training Institutes. Similar principles should be followed in recruitment of educational personnel other than teachers.

(vi) *Accountability and Code of Professional Ethics*· Norms of performance by the different categories of educational personnel, such as, teachers, headmasters, principals, supervisors, and institutions, such as, office of the District Inspector of Schools, Circle Inspector of Schools, Directorate of Education, Teacher Training Institutes (TTIs) must be prepared by the state level bodies in consultation with the representative groups and should be notified in behavioural terms Non-observance of norms and code of professional ethics must result in dis-incentives while good performance must receive recognition and incentives

(vii) *Training* At present there is provision of training for key educational personnel, such as, educational planners and administrators; teacher educators and head of educational institutions Considering the large number of educational personnel working at the directorate, district and block level institutions as well as functionaries in the field of adult and non-formal education, it is necessary that either regional centres of National Institute of Educational Planning and Administration (NIEPA) or its sister institutions at the state level should be established Separate training institutes for teacher educators working in different elementary TTIs should be established at the state level to provide short-term and long-term training

(viii) *Decentralisation of Power:* It is seen that state level administration with limited manpower is over-burdened with a lot of simple routine activities, such as, sanction of leave and advance, loan from General Provident Fund in respect of large number of teachers. It causes unnecessary and intolerable delay resulting in discontentment among teachers Since such activities do not require special expertise of the state level personnel, these should be assigned to district/block level administration

Conclusion

The ultimate goal of restructuring and revitalising management of primary education in an educationally backward state like Orissa is to make primary ~~education~~ available to all sections of population and also to improve its quality. In a democratic set-up like ours this goal can be achieved only when management of primary education becomes affair of the people at the grassroot level. In order to operationalise this idea of people's participation in the management of primary education it is necessary to take certain viable decisions relating to the policy, planning, supervision, monitoring and financing, and other aspects of the programme

Structured Integration : An Experiment

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Integration is a spirit of partnership and cooperation. Structured integration is a child-centred approach, a model for providing specific structured intervention to normalize and ultimately mainstream an individual with disability Amar Jyoti was established in 1981, with an aim to combat disability through out-reach programme Children with disabilities are identified Children who need special intervention are subjected to a series of assessment, such as psycho-assessment; academic assessment, medico-assessment, and socio-assessment. A record card is maintained for each child which has personal data as well as full development data. Some of the structured activities through which integration is being achieved are described here.

INTEGRATION is a spirit of partnership and cooperation for normalization Normalization refers to the process whereby people with disabilities are given the opportunities to obtain an existence as close to the normal as possible Integration, as a matter of fact, promotes normalization. Integration promotes in the people with special needs the courage and confidence to face life and in the normal children it promotes the acceptance of the differently abled as equal partners

Integration has its roots in *Symbiosis* The Oxford Dictionary defines symbiosis as harmonic association of different organisms It is an age old natural process at all rungs of life, living interdependently for mutual benefit Human beings can make most from life by learning to achieve by participation Integration is an optimistic outlook. Famous Panchtantra story also depicts enjoyment of full life by a blind and a lame person living together cooperatively

Every child's disability is unique. Its needs are peculiar. These are to be fulfilled by specific structured intervention to normalize and ultimately mainstream the individual.

Models of Integration

UNICEF started Project Integrated Education for the Disabled (PIED) in India in 1985 with predominantly two models

(a) Composite Area Model

(b) Context Specific Service Delivery Model

The former emphasized the concentration of facilities and services whereas the later was more practical in approach

Structured Integration

It is a child-centred approach It is a modality of providing at a convenient point and time the need-based services to combat disability Every child's disability is unique Its needs are peculiar These are to be fulfilled by specific structured intervention to normalize and ultimately mainstream the individual The Service Delivery Model has accordingly been further modified The service personnel reach out to the needy Here the well goes to the thirsty. Realizing that the child with disabilities is shy, modest and mostly unable by himself to reach for the specific service(s) due to his immobility and academic commitment Children as such would settle with the damaged mobility aids but it is the experts who reach out to them to check, advise and provide services

Amar Jyoti Way

Amar Jyoti was established in 1981 with an aim of combating disability. It started integration programme right with Class I By 1990 this had fully expanded Now there are classes from Nursery to VIII with more than 580 students ranging 4-16 years, 50 per cent normal and 50 per cent differently abled in the terminology of their architect Dr (Smt) Uma Tuli. Through out-reach programme the most needy, underprivileged and also children with disabilities are identified from urban slums of Delhi and around and offered place in the school Children not yet ready to join the normal stream are admitted in the special/non-formal wing.

At the time of admission, children needing special intervention are subjected to the under mentioned series of assessment by an interdisciplinary team

Psycho Assessment

The case history is taken to ascertain the cause of disability Cognitive level is assessed to determine the course of intervention with the help of referrals. Counselling for the child and the parents is arranged where necessary.

Academic Assessment

Education is the main intervention and the teacher a major therapist Academic assessment, therefore, assumes prominence for initiation to education

The academic assessment along with the psycho and medical assessment determines any of the following appropriate types and level of educational intervention the child needs to go in for.

1 *Home bound training programme:* Due to age or disability the child may not be able to attend the school regularly. The parent is imparted training to carry out early educational intervention till the child acquires pre-academic skills and is fit to attend a school

2. *Special School* To acquire special training e.g self help skills of daily activity, total communication, mobility and orientation and pre-academic skills.
3. *Special section in a general school* The child may not be able to attend the general school for some time He is put in a sheltered class for elementary skills
4. *Normal class with participation for different subjects/ activities in other classes:* The student may not be able to cope up with his class in a particular subject He attends junior class in order to grasp the basics He may form part of a co-curricular troupe and join the seniors because of his talent
5. *Normal Integrated class with or without support in and outside the class.* A visually handicapped child may need a relief map available in the resource room to understand the layout of the geographical phenomenon Hearing handicaps may need a sign language interpreter for the lecture in the classroom or auditorium

Medico Assessment

Medical assessment team comprises of a general physician, a paediatrician, ENT specialist, dental/oral hygiene, orthopaedician for check-up and follow-up. May be the patient is sent for speech and occupational check-up and therapy if need be Sometimes, the child may have to undergo corrective operations for mobility. Orthotist assessment is also arranged for provision and fabrication of suitable mobility aid and appliances for the differently abled.

Socio-Assessment

Home is the matrix of integration With the growth of the child his socio environs also expand. The child's family background, home neighbourhood environs—physical, psychological and economic conditions—are assessed and the parent and child are counselled accordingly

Home visits by social workers have a tremendous boost for mutual understanding If economic conditions dictate, the child is given school uniform, books, stationery, medical, mobility aids including shoes at a concessional rate commensurate with the economic status.

Parent participation has a great contribution in the upbringing of a child A child with special needs is to be assisted at home to get ready for school, to be escorted to and from the school/pickup point At home he is to do home work, buy some items for his project work from the market, library and also photostat work His participation in co-curricular activities, preparing text for lecturettes, debate, morning assembly for a short speech Above all, the supportive positive attitude of home is a tonic for healthy growth The contribution of home can never be exaggerated in the developmental context. The school-home interaction through Parent-Teacher Association/meetings and visits enhances support for the child's growth.

School Record Card

A Record Card for each student is made at the time of admission. In addition to the personal data it contains in full the developmental data—medical, social and educational While the student is in the school

DOCUMENTATION

the card remains on the live shelves and thereafter it is transferred to the follow-up section. It is quite often referred to by our research team

Implementation

The integration is achieved through the normal school activities Some of them, specially structured to act as catalyzing agents are described below

Morning Assembly

Morning assembly in Amar Jyoti is actually a *Dharam Kshetra*—field of activity. All the school children and the members of the staff join the assembly It has been observed that the handicapped children generally suffer from a sense of incapability After the normal choire of the school assembly the students are addressed by a psychologist He uses Group-Psycho-Therapy. He gives quite often short talks towards building self-esteem, self and social adequacy, an "urge to rise" in life and general awareness of the relevant social and national scenario The feeling of incapability in due course of time is changed into self-confidence, *Hum Kisi Se Kum Nahi*

The occupational and physio-therapist identifies the children in the assembly needing their services They advise them to report to OT/PT at allotted time for the services required An expert from workshop goes round checking their calipers, crutches, wheel-chairs and other mobility aids including special shoes. Where servicing is required the children are given time slot to visit concerned sections of the workshop Children as such have a tendency to settle with the damaged mobility aid but it is the experts who reach out to them to ensure that the immobility is not a hindrance in their studies and normalization. Every child is helped to receive education with necessary support from a sensitive system The management ensures that the experts and the spares are available at the given time and the service time does not interfere with the academic programme Physical comforts are attended to with promptness.

Greetings

Every child in the school is a VIP He is presented with a token gift on his happy birthday. He in turn sings a song to the assembly. After the end of the assembly every child when walks back to the class room is greeted by the counsellor/class-teacher Greetings are exchanged with a smile. One-to-one eye contact is established Its influence on personal and social development can never be exaggerated. Students faltering in uniform are helped out. Personal cleanliness is looked into Any apparent disease of skin, eye or white patches, etc is pointed out and students advised accordingly. Every child thus feels that he is cared for in the school

Mid-Day Meal

During the lunch break, children are served hot nourishing meal. Wheel chairs also reach the service point A spastic, for example, cannot hold his plate and eat His peers readily come forward to help. Some children even spill *kheer* on their uniform, attendants are readily available to help. No child is deprived of participation or his/her share because of disability

Recess Period

Integration is best manifested in the play ground. Children run, limp, hop, move with calipers, crutches, wheel chairs. Hardly will you find a child sitting alone in a corner disappointed because no one can take him out. Children invent and devise their own games. They play hockey with their crutches, wheel-chairs serve as stumps. Cricket is hot craze. Youngsters enjoy the swings, slides, merry-go-round or strolling hand in hand with peers. Karate, archery, table tennis are fun for the seniors. Amar Jyoti teams, for example, have participated in FEPSIC sports held in 1994-95 in China, a Special Olympics. Cultural and sports meets organized by NIMH and Ministry of Welfare are quite eagerly awaited.

Co-curricular Activities

Co-curricular activities along with the academics form the major medium of integration. The presentations have a large number of participants. All children, irrespective of their disability are given chance to join various clubs as per their interests where training is imparted by experts. These children are then woven into various cultural presentations, games, sports. Wheel Dance presented by Amar Jyoti children in the Republic Day Parade in 1995, telecast world-wide, was a unique specimen of structured integration—Amar Jyoti way.

Diwali Mela is an opportunity for on-the-job vocational training for students for handling an outlet. The aim of the Mela in Amar Jyoti is not to amass large profits but to impart training, experience and participation in management.

Vocational Guidance

Vocational guidance is the back-bone of integrated education. Vocational efficiency helps developing sentiment of self regard and worthiness. Despite best facilities, the disabilities practically come in the way of development. "When the sea is stormy catch the nearest shore, children with disability should pick up a vocation as soon as possible and settle through self-employment, syndicate membership, service, etc. Carpentry, painting, drawing, weaving, stitching and knitting, art, craft, screen printing, computer, repair of electrical gadgets, workshop in mobility aids, etc. are some of the vocations for which elementary training facilities are available in the school to cultivate skill, aptitude and caliber.

Case Conference

Cases requiring inter-discipline coordination and consultations are brought out for discussion and, review in the case conferences held weekly. They are attended among others by members of child guidance team, medical department OT/PT/ST, school, social worker. The minutes are recorded and followed up. Relevant extracts are kept in the individual record files.

Follow-up

While the students are at Amar Jyoti they are helped to get disability certificate so that the facilities provided by the government are availed by the entitled persons for rehabilitation.

The ex-students are approached yet through on other expert Research Associate School is in touch with all of them wherever they are The ex-students needing special services are permitted to avail the existing facilities of mobility workshop and vocational training. They are also invited to the special functions in the school An up-to-date record is maintained of their growth and contributions Viewing the school life at Amar Jyoti will convince any one that integration here is a complete success. All children able and differently abled enjoy the same privileges They develop positive qualities like cooperation and reconciliation Our ex-students are still in pipe line We know they will settle well in life and contribute to social cause

Evaluation

A study has been undertaken to assess the efficacy of the services/training provided to the students and also to find out ways and means to improve the quality and relevance of the school services to life Amar Jyoti by itself is an experiment in evolving a perfect model of structured integration with traversal involvement of different agencies that are interested in rehabilitation activities—education, health, welfare, etc.

Emerging Horizon

Integration, no doubt, provides enormous opportunities to the handicapped to face life with courage and confidence education empowers The able bodied children also undergo positive attitudinal changes towards disability Feeling of pity and sympathy is replaced by confidence in the abilities of the handicapped. Their outlook is changed They start looking at the assets of the handicapped children e.g good at maths, plays flute melodiously, etc In certain cases the handicap becomes the source of inspiration too The friendship developed at school level is transformed into vocational partnership

The Community at Large

The attitudinal changes brought into the children of integrated schools also affect their families. But the community at large, the neighbours, the locality people still continue to label the handicapped. To extend the gains of attitudinal changes brought about through the integrated schools, the government should encourage opening of more such schools 'Catch them young', they are the future society/community. More and more young children should come across the handicapped through integrated education at all levels. Accomplished handicapped persons should be highlighted like Surdas, Lord Byron Mass media should be co-opted with education to hasten this positive trend

Cognitive Deficiency of Tribal Children

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Education for the underserved population, especially the tribal population, is a major concern of the educational planners. How to bring them into the fold of formal education? How to stop the run-away dropouts? Current researches have shown that the tribal children have deficiency in verbal skills and other cognitive deficiency. Absence of early stimulation also results in impaired communication in later years. Verbal mediation is also a necessary skill for problem-solving, therefore, deficiency in verbal skills can have far-reaching effects. The elementary school teachers are not equipped to handle, diagnose and evaluate such deficiency before planning educational programmes suitable to tribal children. Therefore such children begin school with basic disadvantage. What should be done to help out such children?

THE current emphasis comes from the observation of the type of cognitive deficiency that a tribal child shows at the time of entering the school. The observations and the researches have shown that the absence of early stimulation is extremely detrimental to the normal development of a child. These findings have generated interest among the researches to identify the aspects of the tribal environment that contribute to the particular deficits in cognitive functioning and skills basic to the successful achievement of children in school.

It has been observed that children who have problems in reading, have much poorer auditory discrimination than those children who are average or good readers of the same class.

Most of the tribal homes do not have books, a daily newspaper, so the child is not exposed to very much reading or verbal or other related materials.

Tribal children generally suffer from inadequate verbal skills. Their home environment is not very conducive to development of these skills. A lot of communication tend to be in gestures or in single words or phrases. Most of the tribal homes do not have books, a daily newspaper, so the child is not exposed to very much reading or verbal or other related materials. Those tribal children who are studying in residential school do not have entertainment facility compared to the tribal children who are living with their parents who atleast have some of ritual or daily entertainment programme, such as folk dance, folk songs, etc. It has been found that the tribal child who is studying in the formal school system is also deprived of their culture and have lack of verbal skills.

This lack of emphasis on verbal skills and experience in the home does not provide a sustaintial background on which the school can build further, but it also does not prepare the child to attend to relatively long or detailed verbal communications from his teacher when he arrives at school. He/she is unable to understand, and accomodate to things that he has never before experienced. If the school is not equipped to diagnose, evaluate and deal with the nature of the child's disability, alienation can increase and he/she can remain 'lost' to a good proportion of what the school has to offer.

It has been found that the verbal skills are necessary for school performance in other learning areas as well and for the tribal children who tend to be less proficient, there can also be deficits in every specific skills, which should be easier for the teacher to discover. In an informal survey done in some predominant tribal classrooms at the begining of the year, it was found that the majority of the non-tribal children when asked could identify all the fifty two letters of the alphabet of Hindi, while the majority of tribal children tested could not identify letters. How could we expect these two groups of children to start at the same point in learning how to read? Yet this is not the kind of skill typically evaluated by the elementary school teacher.

Deficits in verbal skills can have effects other than impaired communication between pupils and teachers and between book and the pupil. Communication skills are prerequisite of any dealings. We also use words to communicate with ourselves and to solve problems. 'This is called verbal mediation', and it tends to be very important aspect of thought. The implication is that if one is deficient in verbal skills he/she may also be deficient in skills for problem solving as a result. Therefore, deficiencies in verbal skill can have very far-reaching effects on other cognitive processes. This is an important factor which accounts for the strong linguistic emphasis on listening, speaking skills in early years of most compensatory education programmes.

This brief discussion has given a broad sampling of the kinds of problems and deficiency found in tribal children. It is not enough to indicate the general dimensions of the problems. But the cardinal question remains as to what is to be done about such deficiencies?

There are no ready-made answers or at least none that has as yet been discovered to solve these deficits of the tribal children. While pre-school and early school enrichment programmes seem to offer a promising solution, it is not yet known as to how much enrichment will be necessary, or for how long a period of time. Nor does it necessarily follow that children who are already in the middle and later school years cannot be helped to overcome the problems that make it difficult for them to succeed in school

What should be the starting point of formal schooling for these children? What kind of school-readiness is needed? Most researches on school readiness programme are based on data on children from middle-class background. Most pre-school programmes also draw their sustenance from these. These children when they enter Class I are equipped with the pre-requisite skills provided by the hidden curriculum of home The 'hidden curriculum' of a tribal child equip him/her with many skills-social skills, survival skills, life skills, quite unrelated to the school related skills

These skills are obviously less relevant to the first grade curriculum In a highly technological, highly industrialised society, it is the school related skills that are necessary ones for the job market Hence tribal children begin schooling with obvious disadvantage

It is the combination of the knowledge and evaluation of kinds of deficits in both underlying skills and in those elements that build up positive attitudes and motivation towards learning that must underline the formation or curricula for compensatory education for tribal children

Meeting Children's Need through Play

PRATIBHA SHRIVASTAVA

Each stage of development has physical, emotional, social and psychological needs. For healthy growth of children it is necessary that their needs are satisfactorily met. A conducive environment and well-planned play group activities can help children develop a balanced personality. Here the author deliberates on the various aspects of child's need and suggests simple ways in which play group activities can be organized.

It is a well-known psychological principle that each stage of a child's development must be satisfactorily completed before the succeeding stage can reach fruition. It is important that a two-year child attains all possible growth and development and satisfactions for his/her age, so that his/her three, four and five-year old stages of development may be adequately met and fulfilled. Each stage of development has its own needs and satisfactions. The function of the group activities through play can help to meet these individual needs by making provision for a well-planned, child-centred programme and desirable environment.

Every child has emotional, physical, intellectual and social needs. These needs can be satisfied in the play group through routine activities, active play, quiet play (relaxing activities) and excursions. Let us first understand the aspects of these needs.

Emotional Needs

A child's emotional needs may be classified under the following:

☐ Love and affection

☐ Security—a sense of belonging in his family and in his own small world

Each stage of development has its own needs and satisfactions. The function of the group activities through play can help to meet these individual needs by making provision for a well-planned, child-centred programme and desirable environment.

☐ Increasing independence
☐ Feeling of personal worth
☐ Sense of achievement through experiencing success in doing things and overcoming difficulties

Emotional needs

Love and Affection. Although an infant's emotional needs are not as apparent as the physical needs, it is now a well known fact that birth brings more than a need for food and attention to physical requirements Pediatricians recommend a mother to nurse her child because of the emotional as well as the physical factors involved in breast feeding In "feeling" warmth and closeness an infant establishes the first relationship with the mother, a relationship which makes for further feeling of well-being and security, and marks the beginning of cooperation between mother and child which is the basis of all human relationships.

Sense of Belonging· The need for love and affection is also a "felt" need The young child must feel that he/she is wanted, that his/her presence is a matter of primary importance to those in his/her environment. Although we realize that the mother comes first in fulfilling this need, the teacher can also contribute to the child's sense of belonging in the group All children need to feel love and affection in every situation in which they find themselves

A teacher can help fulfil this need by greeting every child upon his/her arrival at school as if the child's presence there made a great difference in the way she feels about her day, as if the child is wanted both for his/her individual worth and for the contribution the child will make to the group

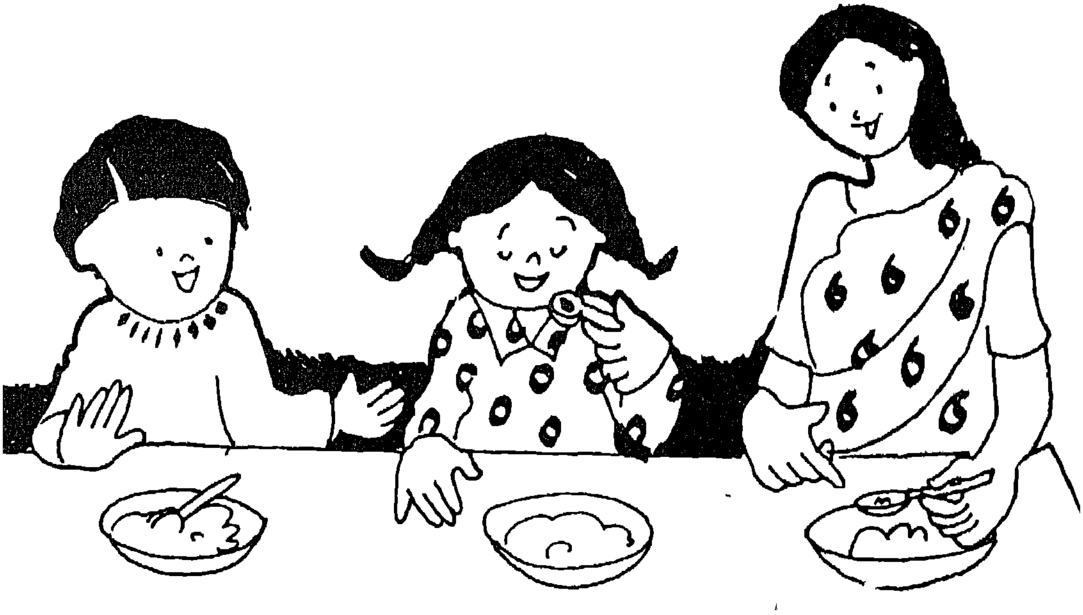
It is wise to strike a happy balance in showing affection for the children in the play group Be friendly to all the children whether they happen to be especially appealing or seemingly unattractive to you

Independence A feeling of independence begins with a sense of adequacy in a situation A play group provides many opportunities for giving a child this sense of adequacy because the environment is set up to meet his needs on his own level The demands are neither too great nor too small A child chooses play materials and uses them as he/she wishes. This is done on his/her own. The child washes hands, finds towel, dries hands and hangs up towel again on his/her own. Thus he/she gains increasing independence in meeting physical needs The teacher also encourages the child to solve simple personal problems, thus help him/her to develop ability for independence of thought as well as of action

Independence

Sense of Achievement· A teacher should ensure that every child has an opportunity to succeed in at least one job. Some children may draw the teacher's attention to their projects and thus provide an opportunity for the teacher to appreciate. Others, however, will never make their presence felt. A teacher must be aware of such children and make it a point to look at their work and appreciate it.

This does not mean that everything a child does must be praised, far from it. But it does mean that the teacher needs to be aware of the psychological principle that 'Praise and regard are positive, blame and punishment are negative'. Always remember to command the achievement, not the child, for example, say "The tower is strongly built today, Raj", and not "what a good boy you are, to building such a fine tower"



Sense of achievement and personal health

All growth in learning must be measured in terms of the child's own abilities and not in terms of the abilities of other children in the the group

Physical Needs

To be healthy it is crucial that the physical needs of the child are fully met A child must have·

- ☐ Plenty of sleep
- ☐ Good food
- ☐ Good habits of personal hygiene
- ☐ Opportunity for activity, for the development of large and small muscle coordination
- ☐ Rest between periods of activities
- ☐ Help with relaxing and overcoming defects caused by tension

Food and Sleep· The concern of a teacher who organizes play group activities comes to the group The teacher must be aware of the experiences a child had before his/her day starts with the teacher. Did the child had sufficient sleep the night before? Did he/she had breakfast, etc ? All these factors must be considered when guiding the child's initial and remaining morning activities.

Health Inspection Once in the class, then the teacher should note down the general well-being of each child, paying special attention to signs of cold or other communicable diseases. If it is necessary, the child may be isolated from the group

Good Habits In a play group, children learn easily good habits of personal hygiene—washing, use of toilet, handkerchief, etc

Physical needs

Development of Muscles With a satisfactory preparatory home experience, a normal healthy child is ready for muscular activity It is most important during the pre-school years that muscles have an opportunity to develop Assuming that the child receives the proper amount of food and sleep to ensure growth, the function of the play group is to furnish opportunities for proper use of muscles This is done through the provision of materials that exercise these muscles—for example, 'Jungle gym', slide, walking, climbing, ladders, wheel toys, etc. Some of the muscles are given opportunity for specific development through the use of materials provided for the quiet play period This can be done through the floor blocks, dolls, trains, boats, trucks, aeroplane, etc

Rest. Many people who are aware of a child's need for activity discount the necessity for periods of rest A close observer will note children involuntarily stopping in the midst of an activity A scheduled period for rest and relaxation has been found very helpful in a well rounded programme It not only provides a time for rest but also provides a change of activity Many teachers find it a useful period to give special attention to the over-excitable, high-strung youngsters.

Intellectual Needs

Apart from emotional and physical need, a child's intellectual needs should also be met These are.

- ☐ Opportunities for gaining factual information about things and seeing the relationships between things in this world
- ☐ Opportunities for practice in experimenting and solving problems by herself/himself, so that he/she can develop an ability to think logically.
- ☐ Opportunities to formulate and carry out plans or projects
- ☐ Opportunities for using his/her imagination and desire to investigate
- ☐ Opportunity for developing a variety of interest

Opportunities to investigate

Getting Factual Material In planning resources of factual material for the play group, the teacher must always have in mind the children's interests, and be ready to extend these through first-hand experiences, books and pictures For example, anyone who has anything to do with young children knows that they are always interested in "things that go"— trains, automobiles, airplanes, boats, etc

The children may be taken out to see a railway station for example, on their return to the play group they may look up at pictures of trains and engines and discuss different kinds of trains and engines, what they look like, their purpose and how they move Similarly, a well planned visit to a zoo can be fun and intellectually rewarding.

Solving Problems· Often it is most profitable for a young child to find things out for him/herself For example, Raju is seen making a building with his large blocks One more is needed to complete the construction, but Raju is just a little too short to reach The teacher's reaction may be "Let me put it on for you", or may be "Get a chair and stand on it Raju—then you can reach". It would be much better to keep quiet and watch Raju decide to take another big block, stand on it and finish his job We can see the glow of satisfaction he experiences.

Carrying out Projects If we expect the child to make the best use of educational play materials, we must encourage the child to concentrate on projects and carry them through. We can do this by seeing that he knows where the equipment is, where he/she may use it comfortably and without undue interference, and by allowing him/her sufficient time to complete the projects he/she has planned Ability to concentrate will be very important to the child throughout his life This ability can be developed even in the play group.

Development of muscles

Opportunities to Investigate· Many preschool materials are made to satisfy the young child's need to investigate, to manipulate and to imagine If these materials are properly used, opportunities to formulate and carry out a plan of action will be certain to present themselves. The teacher must know where a word of encouragement might be useful, where a suggestion here and there would sustain the interest, or where a bit of information would help in fostering future activity

Developing Interest. In the play group the children find many things to do. As one pre-school child expressed it, "I don't know what I shall do today, mother, you never can tell what may happen in our school, we may just sit and listen to a story or we may dance" Ever the element of surprise, ever a touch of the unknown to pep up the inevitable routine events of a play group programme How well the adult knows the hum-drum aspect of always doing the same thing at the same time every day every month Children, too, appreciate a 'break' so a teacher should never forget to introduce many and varied interests at many and varied intervals

From the above discussion it may seem to a teacher that organizing the play group is a formidable task needing lot of time and energy. But it is not so. All activities need not be conducted every day. A teacher can pick and choose. A teacher should be ready for *sponteneous improvisation* The example given below is only illustrative.

"Mohan comes to school bursting with excitement over the birth of a calf He wants to share his joy with other children. Children are keen to see the cow The teacher arranges an excursion to Mohan's house though she had planned to take painting lesson that day but the day turns out to be very exiting and fruitful" Motto is strike when the iron is hot, take advantage of children's interest sooner as possible.

Social Needs

It is obvious that the play group can provide an excellent medium for satisfying these social needs There the child is among youngsters of his own age, with similar needs, interests and desires Most children lack this experience at home, and it is very necessary for their social development.

A child's social needs include

☐ Opportunities for practice in getting along with other children, learning to give and take, standing up for his/her own rights, giving in to others, learning to assume leadership, etc

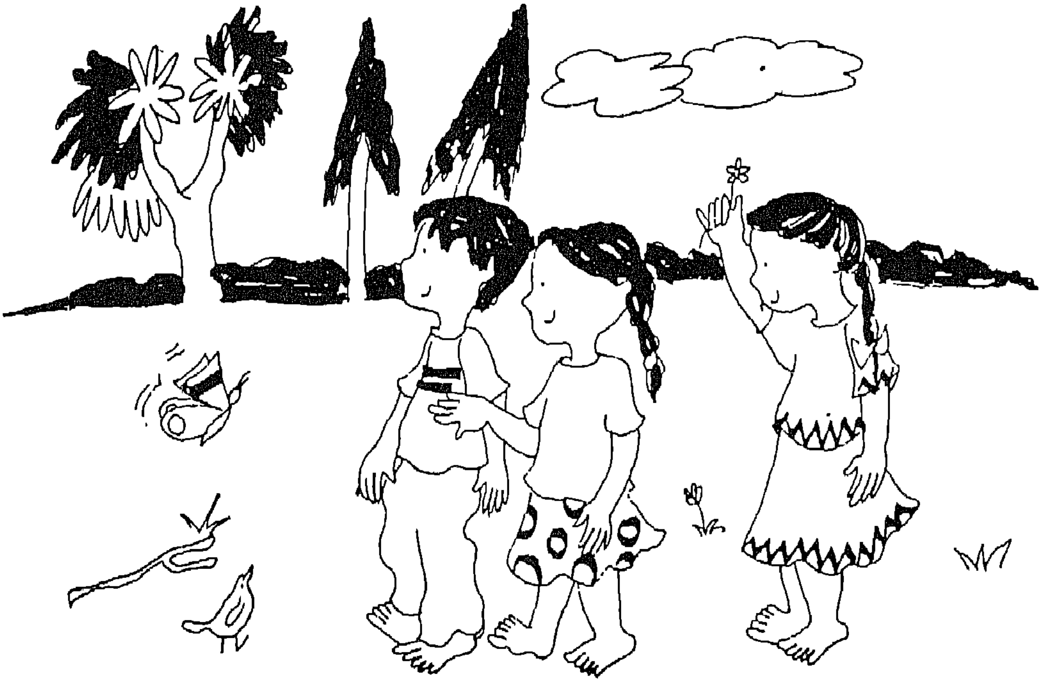
☐ Opportunities for practice in getting along with adults—co-operating with and adjusting to adult supervision.

☐ Approval of playmates and adults

Getting along with Other Children It is easier for four-year olds to get along with other four-year-olds with the same desire for activity and the same interest in moving things, for instance, than it is for a four-year-old to play with an eight-year-old of more advanced interests and development When a child feels secure in a group of his/her contemporaries it is not difficult for him/her to find confidence in his/her abilities to lead various activities in the play group programme A child not only gives to a group but also learns from a group Other children drawing, singing, modeling with clay or what not will stimulate the individual to do the same

Getting along with Adults. Up to the time the young child enters a play group, his experiences with adults have been mainly with his parents, relatives, and his playmates parents Now he finds himself in a new relationship, that of child-teacher The social and emotional relationship are interrelated in every situation.

It is very important for the teacher to remember that each child has his/her own



Getting along with others

way of reacting to her personally and to her suggestions

Approval. Three-four and five-year olds imitate their elders, do what they do and try to be like them in actions, words and deeds A child who wants to help his/her mother, not only desires to be doing what his/her mother does but also seeks her approval The child who carries through his/her activities successfully in the play group receives the approval of both his/her contemporaries and the teacher finds learning a satisfactory way of life Since children are so anxious to please us, we should be ready to give them the feeling that we like and appreciate what they are doing.

Growth is certain in an atmosphere where one is accepted for his own worth and for the contribution he/she is making to the group

In summary, let us remember that in the play group activities our main concern is to help our children attain full physical, mental, emotional, intellectual and social growth for their own stage of development.

Education of Children with Hearing Impairment

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Educating children with hearing impairment is a great challenge especially in the context of Education For All. Integrated education of the disabled is gaining currency. The children with impaired hearing have disadvantage in understanding many concepts in science and mathematics Instructional materials and methodology need to be modified/adapted to teach difficult concepts to these children This study was undertaken to find out the effectiveness of a modified instructional material in Science for teaching difficult concepts to such children This modified instructional material was tried out on children attending special school as well as integrated school The sample consisted of one hundred hearing impaired children and one hundred normal children

EDUCATION For All needs systematic and necessary preparation of disabled in academic areas There are limited exclusive system of education services available in the country With the result, most of the children with substantial hearing loss are being deprived of proper schooling

The teachers teaching science and mathematics find difficulty in explaining abstract concepts even in exclusive system of education partially because most of these teachers do not have sufficient mastery over content and also are not aware of proper methodology to be followed for teaching concepts. The author has undertaken an ERIC Project on 'Finding out the effectiveness of modified science instructional materials for developing difficult science concepts in hearing impaired, in integrated and special schools'.

The teachers teaching science and mathematics find difficulty in explaining abstract concepts even in exclusive system of education partially because most of these teachers do not have sufficient mastery over content and also are not aware of proper methodology to be followed for teaching concepts.

Methodology

A teachers' manual was developed for teaching identified difficult concepts This manual was prepared by the author and was approved by experts in this area For preparing this manual the difficult concepts in science were identified with the help of science teacher teaching hearing and hearing impaired in normal and special schools of Delhi and Haryana. For teaching these identified concepts the adaptations were suggested for methodology to be followed by teachers in IED and special schools as the hearing impaired find it difficult to understand the language in science textbooks used in ordinary schools of the country, by the Department of Teacher Education, Special Education and Extension Services, NCERT.

The main objectives of this project were:

☐ To identity areas and concepts from the science textbooks requiring adaptation to meet with the educational needs of hearing impaired studying in ordinary schools ;

☐ To develop exemplar materials to facilitate the teacher to develop and plan instructional material for teaching science more appropriately,

☐ To develop a handbook on the adaptation in science instructional materials for the primary school teacher for trying it out in ordinary schools.

The identification of areas and sub areas from the textbooks from the point of view of adaptation was done on the following guidelines

Guidelines of Adaptation

—Science terminology used in the class should be explained with their meaning and clear illustrations should be provided.

—The vocabulary, phrases and keywords used for explaining a particular concept in science should be taught first so that better understanding can be achieved. The hearing impaired children require concrete situations for understanding vocabulary and phrases

—The material should be presented in such a way that it enables the hearing impaired children as well as hearing children to understand the concept clearly. The comprehension level of these children should also be taken into consideration while teaching science concepts to them.

—Aids and equipments required for teaching a particular concept of science, should be prepared by regular teachers well in advance with the help of resource teachers.

—Three-dimensional models should be used for teaching science concepts at primary level Teacher should try to use real objects and models as far as possible to make children understand the concept to be taught in integrated classes.

—Short trips and educational excursions should be arranged to provide opportunity for self exploration of the environmental things and should allow children to discover things for themselves. The self-exploring and discovery methods are considered to be more effective than the chalk and talk method

—While providing instructions for covering the topic to be taught to the integrated class, the teacher should be clear about the basic (essential) attributes to be covered and also about the number of attributes to be covered for making the children understand the particular concept

- While teaching the attributes relating to sound concept the sound component should be supplemented with more visual cues to provide a clear understanding.
- Teacher should also determine the limit for providing various situations and examples needed for teaching a particular concept Beyond the limits, the teacher should involve the resource teacher for teaching the difficult concept which consumes more time and energy of teacher for teaching hearing impaired in integrated class
- Guidelines for the parents should be given and it should include more explanation and descriptions relating to the concept for developing scientific attitude among these children
- The teacher should enable the hearing impaired to develop abilities to recognize, define and discriminate, generalize, the science concepts taught to them
- While adapting the instructional material there should not be any change in the original concepts included in the curriculum, because the objective of the adaptation is to provide some learning experiences to both types of learners in integrated setting
- For providing the same experiences, the compensatory activities should be planned for hearing impaired children in such a way as to help the children to get a better understanding concept taught in the class.
- Modification in the instructional material should not disturb majority of the hearing students studying in the integrated class.
- The adaptation in the instructional material should motivate both types of learners and also sustain the interest of the majority of the hearing students in classroom participation

Sample of the Study

One hundred hearing and one hundred hearing impaired from Class II-V studying in integrated and special schools constituted sample for this study. Only moderately hearing impaired who had received preparatory education were included in the sample for this study

Tools used

For finding out parity between intelligence level of hearing and hearing impaired students Raven's Progressive Matrices was used. For obtaining detail data about hearing loss and medical history a questionnaire was given to parents This data was confirmed from the admission register

The students were divided into two groups—hearing and hearing impaired. Science Achievement Tests were developed and administered classwise for Classes II-V. The scores received on these tests before starting the treatment provided pretest data The students were taught for six months by teachers teaching science in IED and special schools using the special handbook on adaptation in science concepts After six months the same Science Achievement

Tests were administered to get the post-test data.

Results and Discussion

The comparison of pre-test and post-test result showed that the hearing children in general performed better than the hearing impaired The performance of hearing impaired on post-test was batter than pre-test. This means that the adaptation in instructional material alone has raised their performance in science. The table given below gives details about the mean values and significance levels

TABLE 1

Mean Values and Significance Levels on Pre- and Post-Test Data of Hearing Impaired in IED and Special Schools

Class	*IED*			*Special Schools*		
	Pre-test	*Post-test*	*Significance Level*	*Pre-test*	*Post-test*	*Significance Level*
II	12.1	13.8	0.01	15.4	16.6	0.01
III	12.8	15.2	0.01	10.95	13.7	0.01
IV	13.9	15.8	0.01	12.6	14.6	0.01
V	13.7	15.8	0.01	12.56	14.8	0.01

Table 1 shows that the performance of Class II students of hearing impaired from special school is better on both pre and post-test than from integrated settings. (but the performance of hearing impaired both from IED and Special Schools is better on post-test and pre-test.) The performance of classes III, IV and V hearing impaired from integrated schools is better on both pre and post-test than from special schools.

The difference between pre and post tests is significant at 0.01 level for Classes II to V both from IED and Special Schools.

The results given in Table 1 indicate that early language development and preparation for education facilitate the hearing impaired in coping with the difficulties of regular classroom participation. Besides the adaptations made in terms of content and methodology also help these students to learn and understand concepts better than the regular teaching without any modification. It reveals that the use of adapted instructional material and methodology also help the slow learning hearing children in IED settings

Conclusions

The integration of hearing impaired needs early language and speech development Early care of hearing impaired with substantial hearing loss is one of the essential prerequisites. The parents involvement in speech and language development is more fruitful. Integration of these children needs implications and modification of auditory based difficult concepts and requires more visual prompts. The adapted instructional material should be developed by involving teacher teaching particular content areas from all educational settings and also requires proper orientation of content teachers and headmaster for utilizing these materials

Learning Achievement of Class I Pupils

A Profile of Shikshak Samakhya Schools

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'Shikshak Samakhya is the project aimed at bringing about qualitative change in learning achievement of pupils by resorting to innovative teaching-learning strategies In this study learning achievement of children of Class I from Katni and Patan blocks of Madhya Pradesh were assessed in language and mathematics. The total sample consisted of 169 children. The children from Katni block had semi-urban background whereas those from Patan block had rural background. Competency-based tests were administered The scores obtained in each subject by the children of Katni and Patan blocks were compared and t-value was calculated In mathematics, there was significant difference between two groups whereas in language it was not significant. A detailed item-wise analysis of percentage of children achieving mastery in each competency was also done. The findings indicated that children did not master (100 by 100) the basic skills of reading, writing, identification of numbers, and simple operation of addition and subtraction.

BESIDES enrolment and retention of children in schools, another objective of Shikshak Samakhya is to bring about qualitative change in learning of alphabets, words and numbers by the children enrolled in schools. The emphasis is to achieve Minimum Levels of Learning (MLLs) Learning achievement of children in Hindi and Mathematics was assessed with the help of Tools 1 and 2. It took two days to administer these two tools Hindi test was administered on the first day on 179 children, but the next day when mathematics test was administered, only 169 children turned up. All the children were in the age-group 6-7 years Children from Katni block had the semi-urban background but children from Patan block belonged to the rural setting

Besides enrolment and retention of children in schools, another objective of Shikshak Samakhya is to bring about qualitative change in learning of alphabets, words and numbers by the children enrolled in schools.

Tool 1 consisted of 10 test items with 15 sub-items to test the achievement level of children in mathematics The test items were framed to test various problem-solving abilities For example, there were sums on addition and subtraction of objects, counting and writing of numbers from 1 to 100, writing of numbers in decreasing order, place values of numbers, sums on addition and subtraction of numbers with '+' and '-' signs, shapes of objects, identification of coins and names of days and months Tool 2 consisted of only five items with 10 sub-items to test the achievement level of children in Hindi language. The test items consisted of singing of any poem or a song with actions, knowledge about bird found in their neighbourhood and reading and writing of simple words and sentences.

The two tools were administered to the children of Class I during March-April 1996 Only one test was administered in one day to avoid the so-called examination phobia from the minds of children and also to reduce pressure on them Though enrolment in Class I ranged from 26 to 69 but only 15 to 25 children were found actually present in the class at the time of administration of the tests

Achievement in Mathematics

Test of mathematics was administered to 169 students—51 from three schools of Katni block and 118 from seven schools of Patan block. On an average 17 children were present in the class to take the test. Blockwise the mean scores of children, the S.D. and 't'-value are given in Table 1.

TABLE 1

Performance of Children in Mathematics

Block	*Mean*	*S.D.*	*'t' value*	*Significant/ Not significant*
Katni (N : 51)	56.04	14.28	5.84	Significant
Patan (N : 118)	42.48	12.71		

t = 1.98 for df 167

Out of 75 marks, the mean score of children of Patan block was found to be 42.48 as compared to 56.04 of children studying in Katni block. The calculated 't'-value of 5.84 (df: 167) is very much higher than the table 't'-value of 1.98 at .05 level which indicates that there is a significant difference in the performance of children of the two blocks and the tilt is in favour of children of Katni block. The difference may be attributed to the topographical situations of schools in the two blocks. Three schools selected in Katni block were in the outskirts of the Katni town, whereas all the seven schools in Patan block were situated at a distance of at least 25-30 kms. from the block headquarters.

Analysis in terms of MLLs Mastery level scores of 100 achieved by children of the two blocks in various test items are given in Table 2 and Fig. 1 from which it is clear that if in compression to 9.3 per cent children of Patan block, 58.8 per cent of Katni block could achieve the mastery level of 100 in item on naming of months, then 100-100 mastery level has been achieved by the children of Katni block in the item on addition of 5 and 3 rubbers or pencils. However, only 83.9 per cent of children of Patan block could attempt this item

TABLE 2

Item-wise Mastery Level of Children in Mathematics

Item No	*Items*	*Percentage of Children with 100 Mastery Level Scores* *Block* *Katni (N 51)*	 *Patan (N 118)*
1	Addition of objects by playway method	100.0	83.9
2	Subtraction of objects by playway method	100.0	89.8
3	Counting of Numbers from 30-40	68.6	46.6
4	Writing of Numbers		
	(a) From 1 - 10	96.1	84.8
	(b) From 40 - 45	80.4	55.9
	(c) From 95 - 100	74.5	50.0
	(d) From 10 - 5	58.8	49.1
	(e) From 30 - 25	41.2	24.6
5	Place value of Numbers at Unit & Ten's places	54.9	15.9
6	Addition of Numbers	72.5	49.1
7	Subtraction of Numbers	64.7	44.9
8	Shapes of different drawings	60.8	21.2
9	Identification of Coins	90.2	89.8
10	Names of		
	(a) Week-days	72.5	22.9
	(b) Months	58.8	9.3

correctly. When the students were asked to solve addition sums by writing numbers vertically one below the other, this percentage decreased from 83.9 to 49.1 per cent in Patan and from 100 to 72.5 per cent in Katni block.

Achievement of mastery level of 100 per cent by the children in other test items in mathematics is described below

☐ 89.8 per cent children of Patan block (N. 118) and all the 51 of Katni block achieved the mastery level in the competency of subtraction of objects when concrete objects were used. However, this percentage decreased from 100 to 64.7 in Katni block and 89.8 to 44.9 in Patan block when the children were asked to solve subtraction problems by writing numbers vertically one below the other. This shows that the children have not understood the meaning of the '–' sign for subtraction.

☐ Almost all the children—84.8 per cent in Patan block and 96.1 per cent in Katni block—could write numbers from 1-10 correctly but the percentage of children writing numbers from 40-45 decreased appreciably. Only 55.9 per cent children of Patan block could achieve the mastery level as compared to 80.4 per cent of Katni block. The percentage of correct responses decreased further when the children were asked to write numbers from 95-100. In this item only 50 per cent of children from Patan block and 74.5 per cent of Katni block could achieve the mastery level

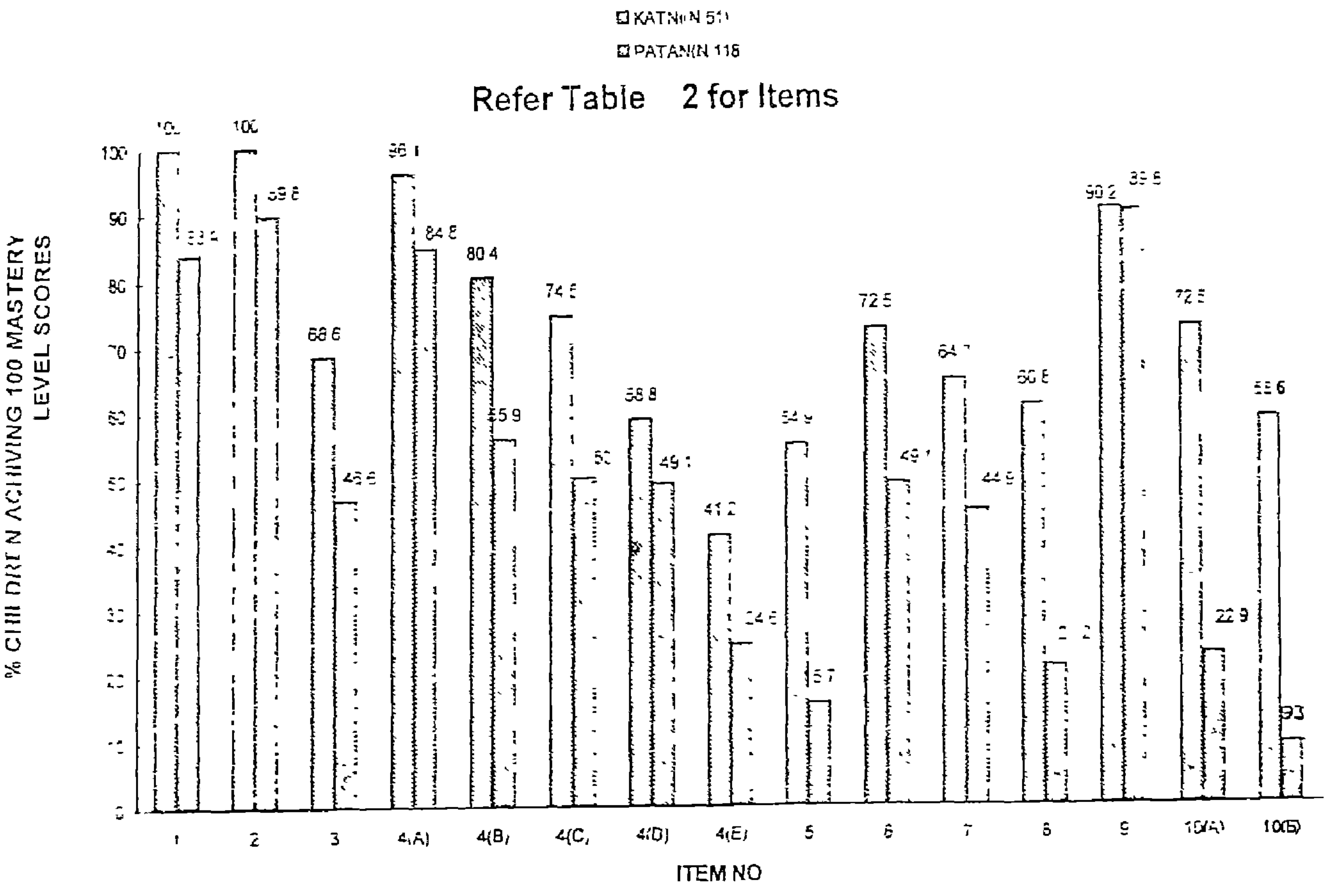
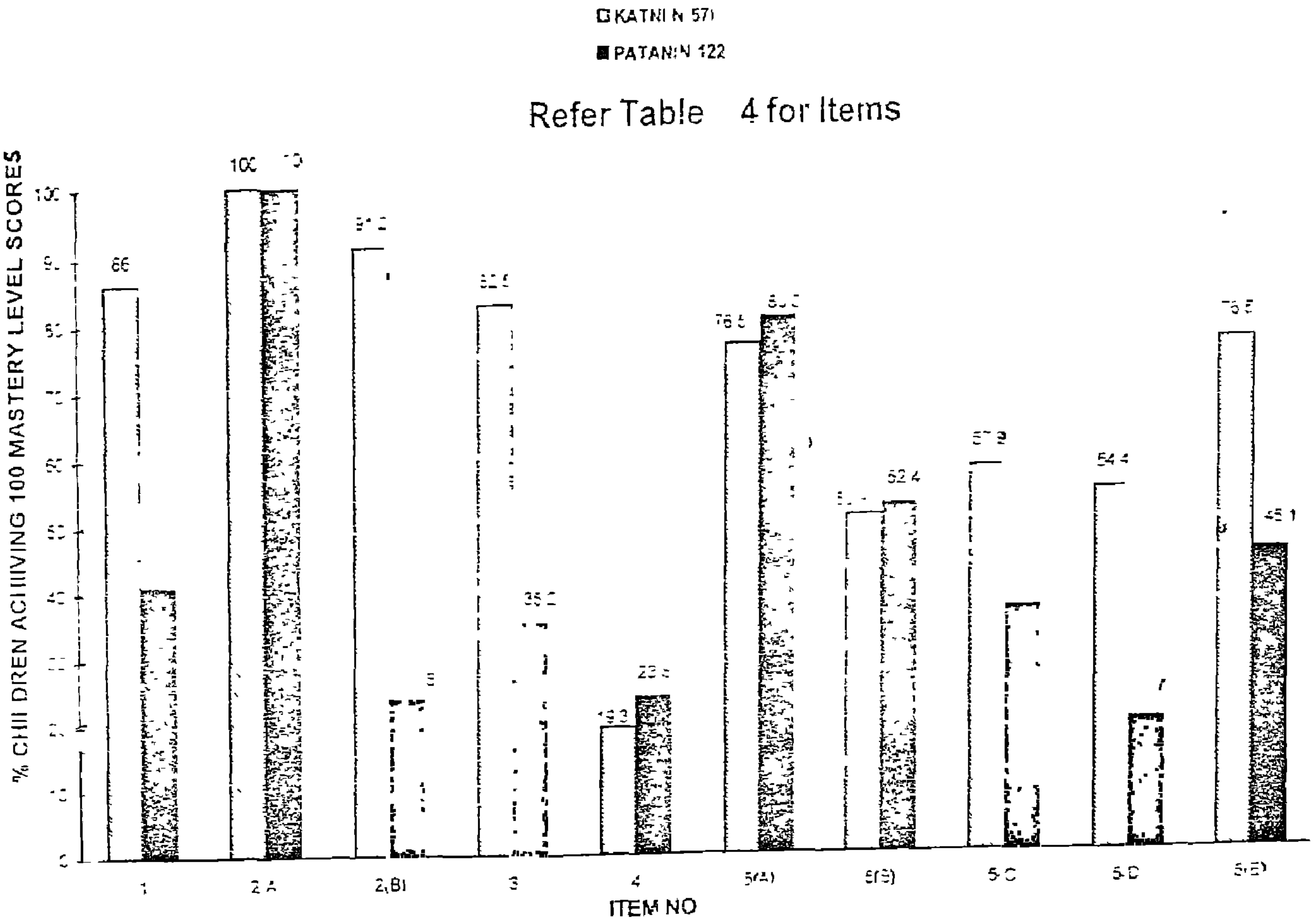


FIG. 1 ITEMWISE MASTERRY LEVEL OF CHILDREN IN MATHEMATICS



Refer Table 4 for Items

FIG 2 ITEMWISE MASTERY LEVEL OF CHILDREN IN HINDI LANGUAGE

☐ 46 6 per cent of children of Patan block and 68 6 per cent of Katni block achieved the mastery level in counting of numbers from 30-40.

☐ Children were also asked to write the numbers in decreasing order from 10-5, wherein it was observed that about half of the children could do this item correctly (49.1 per cent from Patan block and 58 8 per cent from Katni block) The percentage of correct responses further decreased when they were asked to write numbers from 30-25 In this case 24 6 per cent children of Patan block could do this item correctly as compared to 41 2 per cent of Katni block

☐ The performance of children is found very poor in items testing the knowledge of shapes of different objects and names of week days wherein only 21.2 and 22.9 per cent of children of Patan block could give the correct responses for the above items in comparison to 60 8 and 72 5 per cent of children of Katni block However, almost all the children of both the blocks have gained competency in identification of coins—89 8 per cent children of Patan block and 90 2 per cent of Katni block have reached the mastery level

Learning Achievement in Hindi

Test in Hindi language was administered to 179 students—57 from three schools of Katni block and 122 from seven schools of Patan block of Jabalpur district On an average, 18 students were found present in the class at the time of test administration. Hindi language test was administered on the first day. Blockwise mean scores of children along with the S.D and 't'-values are given in Table 3

TABLE 3

Performance of Children in Hindi Language

Block	*Mean*	*S D*	*'t' value*	*Significant/ Not significant*
Katni (N 57)	33.86	13.12	1 72	not significant
Patan (N 122)	30 52 ·	9 59		

t = 1 98 for df 177

Out of 50 marks, the mean scores of children studying in Katni and Patan blocks have been found as 33 86 and 30.52, respectively, with the S.D. values as 13 12 and 9 52 The calculated 't'-value of 1.72 is found to be lower than the table 't'-value of 1 98 (df. 177) which indicates that statistically there is no significant difference in the performance of children of the two blocks though the mean score of children of semi-urban Katni block is found to be slightly better than that of Patan block.

Analysis in terms of MLLs· Mastery levels of 100 achieved by children of the two blocks in various test items are shown in Table 4 and graphically represented in Fig 2.

☐ Item 1 was on recitation of a poem/song. 41 per cent children studying in Class I in Patan block could recite the poem/song with actions and without any hesitation as compared to 86 per cent children of the Katni block.

☐ Item 2 was on colour of the crow and difference between a crow and cuckoo.

TABLE 4

Itemwise Mastery Level of Children in Hindi Language

Item No.	*Items*	*Percentage of Children with 100 Mastery Level Scores*	
		Block	
		Katni (N 57)	*Patan (N 122)*
1	Recitation of a poem or any local song	86.0	41.0
2	(a) Colour of the crow	100.0	100.0
	(b) Difference between the crow and the cuckoo	91.2	23.8
3.	Writing of one sentence from the book	82.5	35.2
4	Dictation of simple words	19.3	23.8
5	Completion of sentence regarding	76.5	80.3
	(a) Name of the child		
	(b) Father's name	50.9	52.4
	(c) Name of Village	57.9	36.9
	(d) Reading of a sentence	54.4	19.7
	(e) Completion of a sentence	76.5	45.1

All the 179 children from both the blocks could tell the colour of the crow correctly This is because all of them see the crow daily around their homes, schools and in the fields Only 23.8 per cent from Patan block could differentiate between a crow and a cuckoo whereas this number increased to 91.2 per cent in case of Katni block

☐ Item 3 was to copy down one sentence from a Hindi textbook. Here the children were asked to write down one sentence from their book Only 35.2 per cent children from Patan block could write the sentence correctly, whereas 82.5 per cent children from Katni block proved to be successful in achieving the target of 100 MLL However, to the great surprise of the investigators children from both the blocks performed very poorly Only 23.8 per cent from Patan block and 19.3 per cent from Katni block could write the simple three-letter words given for dictation. It is, therefore, easy to infer that most of the children have not developed the competency to identify and write the alphabets correctly but they can reproduce the words correctly to some extent if allowed to copy from the book/black-board.

☐ Item 5 consisted of five sub-items to test reading and writing abilities of the children. Around 80 per cent of the children in both the blocks could write their names correctly but the percentage of children writing their father's name correctly decreased appreciably to 50 per cent. This percentage was further reduced to 36.9 per cent in case of children of Patan block and 57.9 per cent for children of Katni block when they were asked to write the name of their village

☐ 45.1 per cent of children were found to have developed the skill of completion of a sentence involving the name of their teacher

- ☐ Only 19 7 per cent of children of Patan block could read sentences given in their book correctly whereas this number was found as 54.4 per cent in Katni block in Katni block (N: 51) where 60 8 per cent of them could identify shapes of object, 72.5 per cent knew names of week days and 58 8 per cent could tell names of months to the team members.

Conclusion

Performance of children of semi-urban schools of Katni block is found better in both the subjects Statistically, the significant difference has been observed only in case of mathematics Percentage of children attaining the mastery level in all the test items, both in mathematics and Hindi language, has been found higher in case of children belonging to the schools of Katni block which had a semi-urban setting.

Almost all the children have gained knowledge of numbers from 1 10 They were able to count and write but majority of them could not write numbers from 95-100. Around 55 per cent of the children could solve the simple addition and subtraction problems, such as 5+4, 6+7, 12+6 and 9-2 and 8-3 Only 49 1 per cent of children from Patan block (N: 118) could develop the competency of writing numbers in decreasing order from 10-5 and 24.6 per cent from 30-25 21 2 per cent of children from Patan block could identify geometrical shapes of objects like triangular, spherical and square. When the children from Patan block were asked to tell the names of week days and months, only 22 9 per cent could tell the names of the days and 9 3 per cent names of months. The situation is found to be definitely better

The situation in Hindi language subject is found to be slightly different When the children were asked to take dictation of simple 3-4 letter words in Hindi language, 23.8 per cent of children of Patan block and 19 3 per cent of Katni block could achieve the mastery level 35 2 per cent children of Patan block and 82 5 per cent of Katni block could copy down one sentence correctly from their books/black-board Around 80 per cent children from the two blocks could write their names correctly but only 36 5 per cent from Patan and 57 9 per cent from Katni succeeded in writing the name of their village correctly. Only 19.7 per cent children from Patan and 54.4 per cent from Katni block developed the skill of reading simple sentences from their books

It can be inferred from the above observations that development of the basic skills of reading and writing and identification of numbers and simple addition and subtraction operations are still half-way. The situation is not very encouraging and much is yet to be achieved especially in the rural areas where majority of the disadvantaged group of children are located. Monitoring and evaluation has not yet been started in the absence of which the desired results of *one day wonder* of Shikshak Samakhya training will be difficult to be achieved.

Promoting Gender Equality through Textbooks

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Equality of educational opportunities and education for women's equality as enshrined in Indian Constitution has been time and again emphasized in various documents and policies Though consistent efforts have been undertaken to remove gender bias from textbooks, the sex-stereotyping is yet to be tackled completely. Attitudes and beliefs of people or practices that conciously or unconciously treat people differently because of sex is called sex-stereo-typing It is a result of under-valuation of the girl child in most developing countries, include India If such attitudes get reflected in the textbooks, it would result in perpetuation of these ideas. The author here gives a detailed description of the guidelines with illustrative examples and suggests the ways in which textbooks can be freed from sex-stereotyping

THE Indian Constitution, Fundamental Rights and the Directive Principles of State Policy give equality to all Indian citizens irrespective of their caste, sex or religion The Policies on Education (1968, 1986 and the revised version of 1992) have emphasised the need to give equal educational opportunities and Education for Women's Equality—it asks of removal of sex-stereotyping from textbooks and empowerment of women and how it is to be achieved In 1986, when the Dowry Act was being amended for the second time, there was also a law against indecent representation of women. Anything that was derogatory about women had to be deleted from all texts.

Despite efforts towards positive direction, one could scan through the school textbooks to find derogatory statements about girls and women even now. The textbooks were causing a lot of damage to the children.

Despite efforts towards positive direction, one could scan through the school textbooks to find derogatory statements about girls and women even now. The textbooks were causing a lot of damage to the children A lot was done to remove the sex bias, but even in late 1980s and early 1990s, one could find that though bias was almost tackled, the sex-stereotyping had yet to be taken care of It is a little difficult task to tackle because the nature of sex-stereotyping is so subtle that unless groups of textbook writers are made aware of such stereotyping, and its consequences are sensitised to the issue, they will not be able to write textbooks which are free from such biases

What is Sex-stereotyping

In simplest of words, sex stereotyping is attitudes and beliefs of people or practices that consciously or unconsciously treat people differently because of sex It then boils down to the "misrepresentation of the female role in the society" It pushes women to a secondary and inferior status. It leads people to mentally accept discrimination, assumptions about males and females Different kinds of prejudices and stereotypes exist in textbooks It results into—"something repeated or reproduced without variation corresponding to a fixed pattern without mentioning those qualities which make an individual different from the other".

Sex-stereotyping is a result of the underevaluation of the girl child in most developing countries, more particularly in India A daughter is seen as an unimportant person in a family All of us are aware of the historic-socio-cultural reasons All these attitudes get reflected in the textbooks because the textbook writers present what they observe in their own society It should be realised that such representation causes damage to society itself—by making children grow with ingrained images (while boys and men looked upon girls and women in their roles of daughters, wives and mothers only, the girls and women perceived themselves as only these and the conscious keepers of their society, as carriers of traditions)

Guidelines for Textbook Writers

It is to undo the damage caused to children by sex-stereotyped books that guidelines have been thought of. These guidelines are for the textbook writers to enable them to write textbooks without sex-stereotyping It is not for the first time that such attempts are being undertaken NCERT, UNESCO and Commonwealth Secretariat have attempted it already The present guidelines are only a rethinking of earlier version All the faculty members of the Department of Women's Studies have contributed in their own way in devising these guidelines While preparing this, I have had the benefit from each one of them

The textbook writers should keep in mind the following

1. Male and female characters should be equally distributed in the texts and illustrations
2. Roles and status of the characters should reflect equal treatment to both the male and the female to bring out the positive and the negative aspects equally.
3. Textbooks should reflect the contemporary changes in the role and status of both the sexes in all areas of life
4. Care should be taken in the choice of words and expressions to eliminate all forms of sex-stereotyping
5. Textbook writers must not lose sight of basic Indian ideas and concepts.
6. Ensure that all self images presented are those that children can identify with and positively project themselves into the future

Unesco has brought out its guidelines for writing *Non-sexist literature* It clearly states that "as an organisation, it is committed to justice, to avoidance of discrimination on grounds of race, sex, language or religion and hence to the fair treatment of individuals, groups, authors and editors of documents, articles, speeches, summary records, etc should, therefore, avoid writing in a manner that reinforces questionable attitudes and assumptions about people and sex roles Care taken in this direction will result in greater precision It should be remembered that imprecise word choices may be interpreted as biased, discriminatory and demeaning even if they are not intended to be"

These guidelines categorically bring out the two problems of ambiguity and stereotyping that arise if care is not taken to choose appropriate words and language Where both sexes are meant, it is better to use a term which includes or atleast does not exclude woman The following examples have been given to illustrate the two problems.

1	*Ambiguity*	*Alternative*	*Comment*
	Man's search for knowledge has led him to improve scientific methodology	The search for knowledge has led us to improve scientific methodology	Rephrased by using first person.
2	*Stereotyping*	*Alternative*	*Comment*
	This woman's husband lets her work part-time	This woman's husband 'lets' her work part-time	Punctuation added to locate the bias
3.	Women's life Women's liber	Women's movement feminist supporter of women's movement	Reconstructed to take away the bias

The following guidelines for the textbooks writers will, to a great extent, ensure writing of textbooks that are free from gender-stereotyping

1. *Increase the visibility of women*: Two points to be kept in mind are:
   (a) Those aspects of human life that women are traditionally involved, it will have to be more adequately represented.
   (b) Women and girls will have to be presented as their part in the public sphere—positions of responsibility and authority just as boys and men do.
2. *Avoid attributing specific traits in*
   (a) *Characteristics:* The greater richness of presented characters will correct the existing bias. Members of both sexes should be represented as human beings with human strengths and weaknesses

Allow	*Avoid*
Women	
(i) To be praised for boldness, initiative and assertiveness	(i) Generalisations about the abilities of either sex
(ii) To exhibit the above characteristics as often as men	(ii) Stereotypes of emotional, subjective female and objective male
(iii) To exhibit self-control	

   (b) *Relationships.* Textbooks normally show single sex groups, children in the care of females only. There is need to project mixed groups and children in the care of both the parents. This will teach the children both the gender relations and how to conduct themselves. Textbooks writers should:

Show	*Avoid*
(i) Mixed or single sex groups as often as male/female pairs	(i) Suggesting either in the text or in illustration that only female or mixed groups are the accepted societal norm
(ii) Girls and women equally competent as boys and men	(ii) Suggesting that there is something odd about girls being in positions of leadership
(iii) Girls in leadership positions as often as boys	

(c) *Occupations.* An attempt should be made to break job-stereotypes for both men and women.

Show	*Avoid*
(i) Women participating actively and positively in worthwhile and exciting pursuits	(i) Implying that emotional life of a family suffers because there is a working mother
(ii) Men observing and lending support where appropriate	(ii) Degrading house work or glorifying it as the only role for a woman
(iii) Women in a wide variety of professions and trades and mothers with outside employment	
(iv) Girls playing and enjoying like boys	

3. *Equal Respect.* Men and women should be treated with same respect, for this, Avoid—

(i) Speaking of women as possessions or using the gender to qualify their achievements

(ii) Referring to men's dependence on women for meals, household maintenance only

(iii) Using the following stereotypes—henpecked husband, scatter-brained female, catty gossip, frustrated spinster and lady like little girl

4. Inclusive *gender-sensitive vocabulary*

(a) *The use of 'man' in the generic sense*

The word 'man' is commonly used to talk about both the sexes. It creates confusion in the minds of children. 'Man' in its generic sense should be replaced by one of the following:

(i)	humans	human beings	humanity
(ii)	human race	human species	individuals
(iii)	women and men	people	persons

(b) *Use of he/him/his as generic pronouns*

As with 'man', male pronouns can be used to refer to an individual male person to male and female persons. This should be avoided to ensure clarity. It can be avoided by:

(i) Adding she/he/her/him, her/his

(ii) Rephrase the sentence so that the subject is inanimate or there is no subject.

(c) *Man as a verb:* Wherever possible avoid using 'man' as a verb. For example,

(i) to man the pumps	(i) to work the pumps
(ii) to man the desks	(ii) to manage the desks
(iii) to man the phones	(iii) to answer the phones

(d) *The use of 'man' in idioms and phrases* The use of noun 'man' in its generic sense should also be avoided in idioms and phrases Some of the examples are

(i)	The man in the street	(i)	Ordinary person
(ii)	The best man for the job	(ii)	The best candidates for the job
(iii)	Man to man	(iii)	Person to person
(iv)	One-man show	(iv)	One person or one woman/one-man show

(e) *Man as suffix*—The suffix 'man' is frequently used in occupational titles or to describe specific groups of people. This should be changed For example,

1	Businessman	1	Business person
2	Juryman	2	Member of the jury
3	Ice-cream man	3	Ice cream seller
4	Kinsman	4	Kin, relation
5	Layman	5	Lay person
6.	Sportsman-like	6	Sports-person-like
7	Chairman	7	Chairperson
8	Spokesman	8	Spokesperson

(f) *'Man' as prefix should be changed* For example

1	Man size	1	Huge size
2	Man-made	2	Human-made
3.	Manpower	3	Human power

(g) *Occupational Categories*. For depicting the occupation following changes can be made

1	Male nurse	1	Nurse
2	Lady doctor	2	Doctor
3	Policeman	3	Police Officer

5 All textbook writers should be sensitised to the gender question

Subjects

Mathematics

(a) Ensure that examples and problems include men, women, girls and boys

(b) Give equal responsibility to boys, girls, men and women in money matters—expenditure, maintenance of accounts.

(c) Make both sexes equally active

Sciences

(a) Include the biographies of female and male scientists.

(b) Talk about the achievements of women scientists especially the difficulties they faced in achieving what they did.

Social Sciences

(a) Talk about the contribution made and roles played by women in development and sustenance of societies.

(b) Contribution of women in the growth and development of economy.

(c) Appreciate the fact that women cope up with pressure at home and work, yet manage both equally well

Languages

Caution should be used in using words and sentences so that stereotyping is not reinforced If an attempt is made in this direction, sex-stereotyping will not find its place in textbooks and children will grow into human beings with an appreciation for both the sexes If the textbooks are free from sex-stereotyping, both boys and girls will go up the ladder and be responsible and able human beings Both need to be treated equally.

Activity-based Teaching-cum-Evaluation

A Strategy for Pupil Achievement

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To ensure qualitative improvement of primary education and for enhancing the holding power of primary schools, various innovative experiments have been attempted from time to time. One of the significant outcomes of the National Policy on Education 1986 (Revised 1992) is the recommendation to identify the Minimum Levels of Learning (MLLs) for each stage of education. Identification of MLL for the primary stage and their implementation at the school level is an important innovation. Activity-based teaching-cum-evaluation is one of strategies adopted to achieve this end. The main objective of this piece of action research is to study the effect of activity-based teaching-cum-evaluation on the attainment and retention of mathematical concepts on the pupils of Class I.

ON the threshold of the twenty-first century, intense debate and discussion are being devoted to the future of human society. In all these debates the importance of children's education has been given highest priority, World summit on Education For All (EFA) has reiterated these concerns. It is a fact that primary education is the first exposure of the child to the world outside and prepares him/her to stand alone away from parental protection and to be a good citizen and acts as a base for further education. Does our system of Primary Education fulfill this goal? Are the children coming out of primary schools reaching the expected learning outcomes? Scenario of Primary Education is quite dismal. The quality of pupils' achievement is deteriorating day by day due to unsuitable curriculum as well as defects in the transaction of curriculum in the schools. Thus to ensure quality and equity in education for all children at

Activity-based, child centred approach, child-to-child collaborative learning, competency-based teaching, Piagetian approaches, playway method and MLLs approach to teaching and learning are some of the strategies adopted for enhancing the learning achievement of pupils.

primary stage a large number of innovations have been attempted. Development of Minimum Level of Learning (MLLs) is one of them The MLLs were identified in pursuance of recommendations of the National Policy on Education 1986 The MLLs were stated in terms of the achievement of terminal competencies (NCERT, 1995) and it is expected that every child passing out of the formal primary school or non-formal system must be able to acquire and master a minimum competencies Therefore, determined efforts have been made towards the achievement of this goal and to do so there are many approaches which have been developed namely activity-based child centred approach, child to child collaborative learning, competency-based teaching, Piagetian approaches, play-way method and MLL approach to teaching and learning are some of the strategies adopted for the learning achievement of the pupils

The review of research studies undertaken in this area reveals that changing scenario in school, alternative curricula and new innovative teaching strategy, such as activity centred approach have had positive effects on achievement of pupils (Loekheed and Longfield, 1991, Bashir, 1992, Bondi, 1991; Agnihotri et al , 1994, Chattopadhyay et al , 1994, Kishore, 1994 and Padhi, 1996). Thus, it was thought worthwhile to examine the effect of activity based teaching-cum-evaluation strategy in the present educational set up to measure the learning outcome and retention of Class I students The present study is an attempt towards this direction.

Objectives

The main objectives of the study were

- ☐ To study the effect of activity-based teaching-cum-evaluation strategy on attainment of mathematical concepts of Class I pupils
- ☐ To compare the effect of activity based teaching vs. traditional method on achievement of mathematical concepts.
- ☐ To find out the effect of activity-based teaching-cum-evaluation strategy on retention of mathematical concept by children.

Methodology

Sample The sample for the study was taken from the BPDM School of Bhubaneswar city in Orissa All Class I students (20 in each session) studying in the 1993-94 and 1994-95 academic sessions were considered for the study

Tools used: For measuring the learning outcome five criterion referenced unit test (with Group A and B) along with an overall criterion referenced test were developed by the investigator using the textbook prescribed for Class I

Design The reported study followed an post-test experimental design only. All the pupils of Class I studying in 1993 and 1994 sessions were considered as control and experimental groups and the activity-based method and achievement scores were independent and dependent variables, respectively.

Procedure From the very beginning of the 1993-94 academic session the teacher teaching mathematics in Class I was asked to test learning performance of students unit-wise and overall achievement on the basis of developed criterion referenced unit test and overall criterion referenced test But in the 1994-95 academic session the teacher was trained to teach mathematics differently on the basis of activity based method. At the end of instruction of every unit the criterion referenced test was administered. The children who were found to secure less than 80% of marks were given remedial instruction and retested by a parallel form of test. Like this it continued till the completion of all the units. At the end of instruction an overall criterion referenced test was administered to measure the overall achievement of students. To measure the retention of learning materials the criterion achievement test was readministered after one month of the completion of the last testing. While the first group of students was called control group (A), the students studying in 1994-95 session were called experimental group (B) for the study.

Statistical Techniques Applied: To find out the meaningful interpretation of the raw scores the data were analysed. S.D. Percentile, graphical representation and 't' test were conducted.

Results and Discussion

The results of the study are presented in Table 1.

The results of Table 1 indicate that there exists significant difference in the attainment of mastery level in the unit-testing between the experimental and the control group. While the control group has attained mastery level only in the first (80.2) and third (80.1) unit the experimental group has attained in all the test and also in overall achievement. When 't' test was applied to find out the difference between the groups, it was noticed that all the six CRs are significant in respect of the experimental group. Thus it can be concluded that children taught through activity centred method can remarkably perform better and have higher percentage of mastery as compared to traditional method. Similarly, it was also found that experimental group possess better retention than their counterparts. Thus to have a more meaningful interpretation of the data the results of the study are also given in the figural form.

Major Findings

☐ The learning achievement of experimental group differ significantly from control group in every unit as well as in overall achievement performance.

TABLE 1

't' ratio in Respect of Percentage of Experimental and Control Group on Unit Test

		Experimental Group % of mastery level	*Control Group % of mastery level*	*'T' values*
1	Unit I and II	90.6%	80.2%	6.37*
2	Unit III and IV	92.8	74.6	9.18*
3	Unit V and VI	91.5	81.0	9.33*
4	Unit VII and VIII	85.0	65.4	10.10%
5	Unit IX and X	88.7	72.3	8.48*
6	Overall achievement	91.8	78.2	8.75*
7	Retention	89.3	77.9	7.03*

*Significant at 0.01 level

It was also noticed that in the experimental group mastery learning has been attained by more than 85 per cent children in all the units as well as in overall achievement than the control group

- ☐ It was found that activity based teaching-cum-evaluation strategy was better approach than the traditional method in developing mathematical concept
- ☐ The students of experimental group had better retention of learning materials than their counterparts.

FORM IV
(*See Rule 8*)

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I, R S Saxena, hereby declare that the paticulars given above are true to the best of my knowledge and belief

Sd/-
Publisher

Let's Play a Game

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Children are creators of various games. They themselves create innumerable games reflecting their multi-faceted social life and representing the highest achievement of human beings of the times. In short, games attract children by their charm and glamour. When playing the children talk and laugh happily, run and jump cheerfully thus throwing themselves into the games. The more is the variety of games, the richer the contents. Children's development promotes and improves their playing. The changes and renewal of games also promote the development of children's body and mind.

Squiggle Game

Let each child make a mark on a piece of paper one by one and slowly it turns into a picture that can be discussed.

Naming Objects

Use objects in the room to develop various aspects of the child's language. It is useful at any level in the primary school.

Let each child make cards naming an object and using the word in a sentence, for example–
Blocks — *Blocks* are lying in the middle shelf.
Hands — We should always wash our *hands* before eating

What Words You Can Explore (with the following picture)

For example,
bushy, furry, swirling
prickly, crinkly, spiky, etc.
zig-zag, hairy
rough, striped

When playing children talk and laugh happily, run and jump cheerfully thus throwing themselves into the games.

Rama and Raja

The children form two lines, facing each other. If the teacher calls, "Rama"—all Ramas turn and run to the line Rajas try and catch them before they get there and vice-versa.

R	R
A	A
M	J
A	A
S	S

Flying Bazookas

The children will stand in a circle One child will throw a tennis ball gently across the circle to someone else The child throws the ball across the circle to somebody new, who then throws to someone different. The game continuous until the ball finally returns to the first person (But each child must remember from whom he/she received the ball and to whom he/she threw it)

Who is the Leader?

☐ The children will sit in a circle
☐ The den leaves the room
☐ The teacher picks a secret leader, who switches from one simple motion to another for, example, clapping hands, snapping fingers, waving arms, which all children copy
☐ The den is invited back into the room to guess who the leader is. The leader keeps changing the actions, and the other children keep copying him, without looking at him directly When the den guesses correctly who the leader is, the leader becomes the den and the game continues.

☐ BE sure you are selecting activities appropriate for your child's level of development.
☐ SELECT games that involve all the children and do not stress competition and prizes
☑ LARGE group games satisfy children's desire to play with many children.

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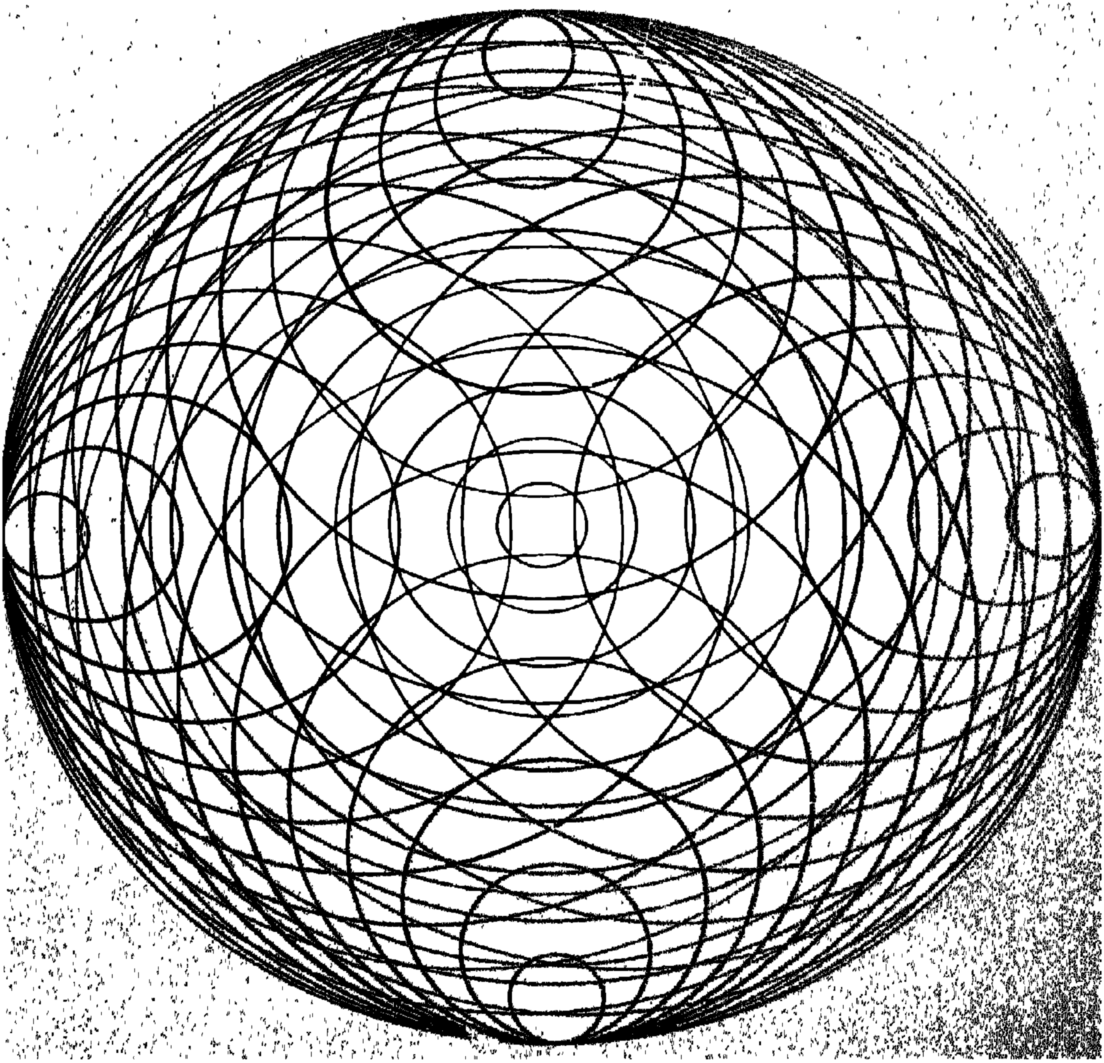

The Primary Teacher is a quarterly brought out by the National Council of Educational Research and Training (NCERT), New Delhi. The Journal intends to give the practising teachers and concerned administrators, authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc. offered at various centres in India from time to time It also provides a forum for the discussion of contemporary issues in the field of education.

The major features of **The Primary Teacher** are:

- ☐ Educational policies concerning primary education
- ☐ Questions and answers
- ☐ States round-up
- ☐ Illustrated material for classroom use

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THE PRIMARY TEACHER

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GANDHIJI'S TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test :

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it ? Will it restore him to a control over his own life and destiny ? In other words, will it lead to Swaraj for the hungry and spiritually starving millions ?

Then you will find your doubts and your self melting away."

mkGandhi

Editorial

Is imparting education only a process of passing certain quantum of knowledge or does it go beyond it? Anybody can obtain information and bare facts from books but wisdom cannot be so obtained. True education is unfolding of one's mind which can bring forth the innate qualities of man and lead him to spiritual consciousness. The '*samskara*' is the accumulated wisdom of this nature. Intangible human qualities such as values of truth, morality, and spirituality are difficult to assess In the article 'Methods of Moral Education', the author has attempted to analyse these qualities, and suggested different strategies to evaluate and inculcate human values among the school children.

The job of teaching is becoming very complex day by day New challenges and frontiers are demanding additional skills and competencies from teachers. The teachers often feel the need for adequate professional development. The article 'The Training Needs of Primary Teachers: Procedure for Assessment', the authors have discussed in detail the various needs of primary school teachers Learning without burden in a joyous atmosphere in the school is an important concern The article 'Madam I Will Not Go Home'. is a beautiful exposition of how the little Radha finds herself in the cruel environment of the school which affects even her health This is followed by a case study of a class child-centred, activity based teaching approach which changes the attitude of Manish The child simply refuses to go home and finds the school an exciting place to say, 'Madam I Will Not Go Home.'

Environmental education at the primary stage is included to make the children aware of their environment. The article 'Teaching of Concepts Associated with Resources' discusses in detail the methodology for teaching concepts related to these. Integrated education of the disabled is gaining ground everyday. The article 'Social Awareness and Integration of the Visually Handicapped tries to throw light on the most affected area of concern, i.e. handicaps are social beings. The article is in-depth analysis of the visually handicapped and the social impediments which work against the visually handicapped persons. Further, the author has tried to present the ways and means of how visually handicapped people can be integrated into the mainstream.

The article 'Teaching: Noble Profession' gives an innersense of achievement but are we as professionals doing our job to claim nobility? It has been put in very succintly the difference between the material and the spiritual. Spiritual slavery cannot make the teaching profession noble. The article 'Planning of Curriculum in Social Sciences', deals with various strategies which can be used for planning curriculum in social sciences.

ACADEMIC EDITOR

Methods of Moral Education

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Moral values have been talked of in regard to education from ancient times till today Therefore evolving of strategies for inculcation of human values is a real challenge to our educators Here the author has presented two-fold strategies to inculcate moral values. One of these is indirect and the other is direct. The former refers to suggestions and the latter to formal discussions and instructions Great importance needs to be attached to indirect influence. In addition to the indirect approach, direct approach is highly desirable in all the stages Shri Prakash Committee, Kothari Commission and National Policy of Education also stress that one or two periods a week should be allotted. From the author's viewpoint if it is success in effective application, we then could secure the condition which alone is necessary to get from our educational system

Is education just knowledge or is it something much more? "Education", says Ruskin, "does not mean teaching people to know what they do not know; it means teaching them to behave as they do not behave", i.e. "leading human souls to what is best and making what is best of them." According to Plato: "Education is the constraining and directing of youth towards that right reason which the law affirms and which the experience of the best of our elders has sanctioned as truly great." Education is the cultivation of man's spiritual, intellectual, emotional and physical nature. It is conterminous with life. While knowledge is a frail instrument to detect evil and put in a fight against it, knowledge simply means a wide acquaintance with books. We may possess knowledge of medicine and may be able to trace the causes and progress of diseases. Thus, knowledge may be derived from books. But wisdom may not be found in books.

Socrates was not very learned and yet he was full of wisdom. The Prophet Mohammed did not claim much scholarship and He was very wise The Buddha was not the Master of Arts of any university and yet no one can question his wisdom Knowledge is a possession of the head and may not have any influence on our conduct. Wisdom has an effect upon our conduct and teaches us to do the right thing in the right place and at the right moment Thus, true education in the case of an Indian is therefore the bringing forth of the Indian *Sanskara* or racial spirit.

Now the question arises to which direction and on what lines this improvement should be done. In other words what should be the standard of education? Great educationists and philosophers of all ages have given answers to these questions Aims of education are determined according to the ideals of life of the people of any time And therefore as the ideals of life go on changing, the aims of education also change from time to time. Socrates believed that universal justice could be sought only by the pursuit of truth. Plato believed in preparing just citizens so as to create a just state. Aristotle believed in the attainment of virtues. With the start of the machine age the aims of education and ideals of life became more and more materialistic But even then persons like Mahatma Gandhi came forward and taught and preached the ideals of truth and non-violence proving the supremacy of the spiritual force over the material Thus, the modern scientific age would have endeavoured to have so many interpretations of education But its consequences would have the production of impracticable, irrational and speculative education as it ignores spiritualism and lays more emphasis on materialism. In fact, education should be sustaining, progressive and a purposive endeavour and these forces arise from moral values which are the eternal truths of life or which have been of significance to human culture. Mahatma Gandhi's philosophy of education aims at bringing about a revolution in minds and hearts of men all over the world. While formulating the aims of education, he said, "The immediate aims of education are concerned with the preparation for complete living, adjustment to environment, perfection of one's nature, character building and harmonious development of personality."

With such lofty ideals India takes pride in an ancient and age-long education system There is no country where the love of learning has so early an origin or has exercised so lasting and powerful an influence. But now the past is dead and gone and we have to look forward by restoring our famous and practical system of education for which India has a prominent place in its past history.

The burning problem of the day is to create ferment which may direct rehabilitation of Indian moral values in our system of education Those who are holding the reins of education should realise the spiritual needs of the nation by analysing the national characteristics to reorientate the present system of education in such a way that the students may become perfect in Indian values of morality, catholicity and spirituality.

Under the circumstances the younger generation is expected to do a lot by building an expected character, realising the moral and spiritual values that would enable the students to shoulder the responsibilities of democratic citizenship with dignity It is expected of them that they would surely maintain and revive the rich cultural heritage of which they should be proud of for centuries to come. They will have to endeavour, to raise the standard of living of the Nation and for this they have to produce more and more efficient and worthy citizens of the Motherland They should not merely confine themselves within the four walls of the Motherland only but will have to prove themselves as citizens of the world at large and should leave no stone unturned to maintain world peace To this end all educational endeavours should be geared up "The challenge is great." Would that our determination be all Himalayan heights with glory?

The question arises as to how best a school can impart these values to the children under its care. The methods are two-fold. one is indirect and the other direct. The former refers to suggestions and the latter to formal discussions and instructions.

Great importance needs to be attached to indirect influence The school atmosphere, the personality and behaviour of the teachers and the facilities provided in the school play a vital role in the development of character. It is said 'example is better than precept ' All the teachers of the school have a heavy responsibility in that, they have to present themselves before the pupils in such a manner so that their behaviour becomes an ideal for their students' Whatever the teacher does will surely be noticed by the pupils and leave its impact of them As such whatever ethical values that the pupils ought to imbibe must be cultivated and practised by the teacher first

Since the ultimate success of a programme to develop moral and spiritual values depends largely on the teacher, the institutions which educate teachers should give full recognition to the values in their curricula These values should also receive emphasis by in-service workshops and other developmental programmes Personal character of an acceptable quality to serve as an example to Indian youth often determines the success or failure of a teacher in teaching subject matter as well as in contributing to moral development

The required moral tone should permeate the whole school atmosphere The session may begin with collective silent prayer and meditation Important *slokas*, slogans and statements of saints, leaders and personalities be put up in the classrooms and verandahs This may induce them, though imperceptibly, to do certain purposeful activities The pupils may read these even casually but constantly In order to obtain good results they should not be in such a large number as to lose their importance.

Moreover, a sense of purpose should inspire all school activities and must be reflected in the life, tone and atmosphere of the school. The school assembly, celebration of religious festivals of all religions, work-experience, team games and sports subject clubs, social service programmes—all these can help in inculcating the values of co-operation, comradeship, mutual regard, honesty and integrity, discipline and social responsibility.

In most team games social differences are subordinated to a sense of comradeship, equality and respect for individual excellence, "Fair-play" becomes an experience in the application of law and justice For such reasons and because of personal close relationship between pupil and teacher, the games' teacher is usually one of the most influential members of the school community in the shaping of moral and spiritual values

The school can form habits of social usefulness and service. A system of self-government in schools on certain occasions will help the children to learn the sense of responsibility and to rightly use it Interest in community welfare—*Shramdan*, village uplift work, social education, service to fellow-beings in drought flood affected areas will be the right moral habits to be developed

Stress should not be laid on correcting wrong-doing but upon forming habits of positive service. Too often, the teachers' concern with the moral life of pupils takes the form of alertness for failures to conform to school rules and routine. Attending to wrong-doing ought to be an incident rather than a principle. Any conditions that compel the teacher to take note of failures rather than of healthy growth result in distortion and perversion. Every teacher must ensure that in the teaching of his particular subject and in his dealings with his pupils, fundamental values such as integrity and social responsibility are brought out

The organised studies of the school can contribute to the moral and spiritual values. For instance, literature and the other arts deal so vividly with human feelings, values and relationship with human frailty and human faith, with the ideas of loyalty, self-sacrifice and courage, that these studies offer a rich field for moral and spiritual exploration.

It will not be difficult for the teacher to find out instances and opportunities in his subject when the values could be picked up and stressed. The teacher who operates in this faith will find every subject, every method of instruction, every incident of school life pregnant with moral possibility.

In addition to this approach for including moral and spiritual values, specific provision for direct moral instruction in the school programmes is highly desirable in all the stages. As observed today it has not been possible for the home or family to develop moral values among their children and as such this responsibility has to fall on the school. There has been numerous cases of indiscipline among the younger generation, the reasons may be plenty but can be attributed to lack of moral instruction to them.

Shri Prakash Committee had rightly recommended that one or two periods a week should be allotted for instruction in moral values. Kothari Commission and National Policy of Education 1968-92 also agreed to this suggestion.

At the primary stage, biographers of saints, religious leaders and eminent personalities, their ideas and preachings and interesting stories connected with important incidents should be included. Even stories from the religions of the world will be helpful. For this audio-visual aids like pictures, movies and coloured slides may be useful Collective singing will be a great attraction to the pupils at this stage. Example of honesty, truthfulness, justice, kindness to animals and compassion for the needy be illustrated in short stories from Parables, Aesop's Fables, Ramayan, Mahabharat and other books on moral science.

At the secondary stage discussions between the teacher and pupils on the values be held. As religious teaching and moral instruction have an intimate relationship, it is highly imperative that fundamentals of all religions be stressed taking care that all important religions are represented properly.

Evaluation of pupils' conduct and behaviour will be a good incentive for helping the child to move towards moral acts.

If we can secure in the pupils a genuine faith in the moral principles and their effective application, we shall have secured the condition which alone is necessary to get from our educational system all the effectiveness there is in it.

Training Needs of Primary Teachers: Procedure for Assessment

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The major demand of our time is change in all spheres of life through education. And, the situation as it exists today requires our teachers to be flexible and self-critical to change themselves Therefore the proper training of teacher is much needed in the emerging society to face all kinds of challenges. The article is all about the kinds of needs assessment, procedure of needs assessment and suggestive methodologies for providing training

TEACHING has become more complex and challenging. As a result, knowledge and skills acquired by an individual in an educational institution are inadequate to meet challenges likely to be encountered in one's career The challenges often emerge from the explosion of knowledge, advances in pedagogical science, technological development, changes in socio-economic conditions, changes in school curricula, changing learning behaviours of pupils, etc. To meet these emerging challenges, teachers need to up-date themselves in knowledge and skills and learn to adjust to changing classroom conditions

Research studies have revealed that teachers face a number of problems because they are under-prepared. Despite various arrangements for practice teaching, their training in general is insufficiently directed towards specific jobs and contexts

Because of the said reasons teachers need to be provided with adequate opportunities for their professional development Such programmes help them to gain requisite additional knowledge in their subject(s) and fine-tune their skills leading to improvement in their proficiency in teaching

Needs Assessment

In-service teachers training to be effective needs to meet their training needs. In this context, quite often, need has been used to denote the gap existing between the current professional status and the desired or the required level In case of teachers, it stands for gaps existing between teachers' present knowledge in their subject/their teaching proficiency and the desired knowledge/desired level of teaching proficiency

In India it has generally been observed that topics for training are selected by people other than those for whom the in-service programme is intended.

In-service programmes rarely address teachers' individual needs and concerns.

Daresh (1987) reviewed approximately 160 studies dealing with participants preferred training topics and desirable content for staff development and found that 'staff development/in-service education is viewed as more effective when the content is based on the self reported needs of participants'

Areas of Needs

Explosion of knowledge, advances in padegogical science, socio-économic changes are taking place in the society, changes in school curricula, reforms in evaluation procedures, inadequacy of initial teacher training (ITT) programme, etc. demand both teachers and trainers to undergo in-service education so as to equip them with requisite knowledge and skills This helps them to become a better performer in their work situation.

The needs emerging from the said developments are broadly classified into three categories

—General awareness
—Content enrichment
—Fine-tuning of skills

General awareness Teachers and trainers both functioning at different levels need to be made aware of the policy directives issued by the central and state governments from time to time and recent initiatives and interventions planned to meet these challenges. For instance, teachers need to be made aware about the functions of village education committees, cluster resource centres, block resource centres, mobilisation of community resources organisation of surveys, decentralised planning and management, interventions such as internationally funded projects to attain Universal Primary Education (UPE), amendments made in NPE (1986) etc Teachers' sensitization to these areas improve their proficiency indirectly

Content enrichment: Changes in school curricula from time to time necessitate teachers' enrichment and upgradation in additional content areas. Teachers who are in service for 20-25 years need intensive training than those with experience of less than 10 years. In the former case, teachers' training is recycling in nature both in content and methodology It would be desirable to identify teacher's training need as mathematics, language and environmental studies systematically through research

Fine-tuning of skills: Studies have highlighted the inadequacies of the existing Initial Teacher Training (ITT) programmes. As a result teachers are underprepared to perform their role in their work situation. Deficiencies in their competencies need to be identified to provide suitable training to them to improve their competencies in different areas. Studies have highlighted that teachers need training to fine-tune their skills such as classroom management, dealing with mixed ability groups, teaching in multigrade situations, handling large classes, assessing student's work and progress, etc

Procedure of Needs Assessment

Generally organisers of in-service training programmes assess training needs of trainees (teachers and trainers) on the basis of their own perceptions/experiences/interactions with trainees and supervisors in formal and informal settings. Training needs are hardly assessed by conducting research studies. As a result, course designs for different training programmes do not reflect trainers' needs appropriately. It is therefore, desirable that needs are assessed following an appropriate procedure. The procedure of needs assessment is discussed in brief in the following paragraphs

Testing Teachers

Content related needs of teachers can be assessed by administering them a test. Their answer scripts would reveal their deficiencies in content Course design for content enrichment of trainees thereafter should be based on these identified needs.

Gupta, Sharma and Bhattacharjee (1996) conducted a study to identify (a) the level of skill deficiency in primary school teachers in operationalising Minimum Levels of Learning (MLLs) in the subject areas of language and mathematics, (b) training needs of teachers in content areas of language and mathematics, (c) to develop interventions to help teachers to make up their deficiency in skills and content. The sample of the study comprised 242 primary school teachers of five blocks located in three districts of Assam under the District Primary Education Programme (DPEP). The study was conducted in collaboration with DPEP Bureau, Assam, SCERT and SIE, Assam.

Researchers developed diagnostic tests both for language and mathematics for identifying teachers' deficiencies The study revealed the following deficiencies

Linguistic Skills

- —Spelling
- —Opposite words
- —Correct sentences (suffix, transitive and intransitive verb)
- —Comprehension
- —Punctuation
- —Simple and complex sentences
- —Letter writing
- —Use of plural form in sentences

Mathematics

- —Place value
- —Decimals
- —Fractions and decimals
- —Percentage
- —Factors, multiples, LCM and HCM
- —Even, odd, prime and other kinds of numbers.

Gupta (1996) also assessed teachers' performance in mathematics and language and identified areas of deficiencies in these subjects. The sample of the study was 42 primary school teachers who had an experience of teaching Classes IV and V The Mathematics Achievement Test (MAT) and the Language Achievement Test (LAT) developed by the NCERT for assessing performance of children at the end of Class IV were used by the investigator for assessing teachers' performance.

The study revealed that teachers experienced difficulty in solving problems relating to concepts like LCM, place value in decimal number, multiplication by zero. Surprisingly about 83 per cent of the teachers were not able to solve problems of LCM correctly. Similarly 62 per cent teachers could not solve successfully a problem related with place value in a decimal number.

In language, 64 per cent teachers were not able to provide a title to a paragraph. The meaning of a phrase was not provided by 48 per cent teachers

Teachers' Classroom Behaviour

Another approach to identify training needs of teachers is through observation of teachers' behaviour in real classroom settings. This approach is more useful in identifying teachers' deficiencies in teaching skills Course design for fine-tuning teachers' skills competencies need to be based on identified deficiencies. Observers however, need to be adequately trained in the observation of teachers' classroom behaviour.

Interviewing Teachers

Interviewing teachers is another approach which one may use to identify their training needs Structured interview schedule may be preferred to an unstructured one. This may however not be very useful as many a time teachers do not reveal their weaknesses/deficiencies in content as well as in skills

Analysis of Pupils' Answer Scripts

Pupils appear in weekly/monthly/half yearly/annual tests. Pupils' answer scripts of these tests reveal deficiencies in their learning. Common deficiencies in pupil's learning reflect that the teacher concerned may not be transacting the content/concept appropriately Thus pupil's common mistakes are a pointer to the teachers' deficiency in transacting the concepts appropriately or mastery over the relevant content. Thus a careful scrutiny/analysis of pupils answer scripts is useful to diagnose teacher's deficiencies in content/skills.

Questionnaire

The questionnaire is considered a potent tool for the purpose of need assessment. Teachers' perceptions about their training needs in different areas can be ascertained through administering a questionnaire to them. The questionnaire should have some open ended questions along with structured ones. Open ended questions provide greater opportunity to the respondents to give their perceptions about their training needs.

Training Design

Arora, Singh and Yadav (1996) developed a training design Recurrent Training of Primary School Teachers, and Resource Persons at cluster, block and district level. Objectives of in-service training for primary teachers were (i) to develop the awareness and understanding of the recent initiatives in the area of elementary education, (ii) to sharpen teachers' professional skills in teaching, curriculum development and evaluation (iii) to upgrade and update teachers' knowledge of content in mathematics, language and environmental studies.

To realise these objectives, training input covers three broad areas viz. awareness of UEE and DPEP, pedagogy for quality improvement and content upgradation in mathematics, language and environmental studies. Suggestive course design for training of primary school teachers, head teachers, cluster heads and block resource persons and district level resource persons have been prepared along with time allocation for transaction of different nodules. it has suggested training of members of DIETs faculty and block level resource persons who in turn would train primary school teachers and other personnel associated with primary education

Different Methodologies

Methodology for training teachers in different areas need not be the same For helping teachers to fine-tune their skills, they should undergo experiences to practise these skills in real/simulated conditions under the supervision of their trainers Immediate feedback with regard to the practice of these skills is highly essential to help them to refine their skills. For sensitizing teachers to certain areas, self-study of training modules followed by discussion would be an appropriate transactional approach. For transacting training modules pertaining to content enrichment, learner-centred and activity-based approach may be followed.

'Madam I Will Not Go Home'

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Active learning approach is a child-centred learning strategy which equip a learner with the skills for creating conditions for effective and joyful learning It is an approach that involves active pupil participation in the learning process But often teachers are hesitant to use this approach. They feel it highly time-consuming and difficult to implement To refute such misgivings, a pilot project entitled strengthening primary education in Kendriya Vidyalayas was undertaken by K V Sangathan in K V. primary schools in Delhi In this article the author shares his experiences through case studies of Radha and Manish

MANY of the educators and teachers believe that it is very difficult to use *Activity Based Teaching Approach* for effective and joyful teaching-learning process at the primary level It requires more physical, financial, human inputs However, the experiences on project of *Strengthening of Primary Education in Kendriya Vidyalayas,* initiated by Kendriya Vidyalaya Sangathan (KVS), has refuted this belief

Case of 'Radha'

Radha age 6 is studying in Class I in one of the Kendriya Vidyalayas. She first came in Vidyalaya with her father and mother, she was innocent, confused and full of apprehension She had never faced such an uneasy situation in her past life. For her, school was an alien environment. She had never attended pre-primary school. She started weeping and crying, when she was asked to be ready for school .. *Papa! Papa! Papa! 'Main Nahi Jawangi' (Father I will not go)..* tears flowing on her cheeks. Both the father and the mother started making many promises to her "*I will bring you this 'toy', this 'dress' this....*" For her it was an entirely new experience. Her innocence at this tender age further complicated her perception about the situation, she was likely to face in this school. She was afraid of all the people entering the school. She was confused to see overall environment in the Vidyalaya. On the first day she was in the school for a short time and went back with her father and mother

The real journey to an unfamiliar place started from the second day, her mother was busy in arranging and putting the books, notebooks and lunch box inside the bag and the child was emotionally disturbed looking towards the mother with a hope that she would bring her back from school early Now it was time to go to school so the mother took her to board the school bus. Emotionally disturbed the child could not fathom what was happening to her Right from the first day the school loaded her with homework, where was the time to play? Slowly and slowly days and months passed, the learning burden increased and playtime got further reduced. Due to increasing doses of homework and day to day learning environment in the class, she lost interest in studies. The teacher on one hand and the parents on the other, started complaining about her performance She was totally confused, frustrated about her day to day activities at home and the school. She did not know what her parents and teachers actually wanted from her, '*Mama I will not go to school*' she cried out with tears flowing on her innocent face but nobody cared By and by her health also started deteriorating. She started complaining of headache, nausea, muscle pain, toilet problems every day All these factors together led to her demotivation for learning

This is not a story of *Radha* alone, there are many such '*Radhas*' in our schools who need due attention and care, However, the case of Radha has raised many issues

- What went wrong with *Radha* ?
- What should the teacher do to make learning an enjoyable experience?
- Are there ways to bring *Radha* back to the normal emotional state?
- What should be the role of parents and teachers?
- How should children like Radha be prepared to face the new environment in school?

All these questions need to be answered from the viewpoint of children like *Radha*.

In the case of such children the root cause of the problem was absence of a school readiness programme, i.e activities related to welcoming the child in a new and different environment, learning burden due to curriculum; books; memory based assignments; homework and mismatching climate of the school with the personality of the child. If learning could be made an enjoyable experience for children, most of the problems would be nullified. If we want and believe that our children must learn from their environment and enjoy the teaching-learning process in our schools, the only tool in our hand is '*Activity Based Teaching Approach*'. National Policy on Education—1986 (Revised 1992) strongly recommended that child-centred approaches be used at the primary level in order to reduce the drop-out rate and non-enrolment. In order to look into the state of pre-primary and primary education with special reference to teaching-learning process, the Government of India appointed another committee under the chairmanship of Prof. Yashpal in 1994. The committee strongly recommended *activity-based teaching approach* at pre and primary level with emphasis on *Learning Without Burden* In pursuance of these recommendations KVS a chain of about 857 Vidyalayas located in different parts of the country decided to strengthen the primary education through use of *child-centred-activity-based teaching approaches* A project titled *'Strengthening of Primary Education in KVS' was started in selected schools of* Kendriya Vidyalaya as a pilot project in 1994-95 The NCERT provided necessary guidance, academic support and training facilities for the key resource persons from KVS. Various workshops and training programmes were organized by KVS for resource persons at regional and school level under the overall guidance of NCERT The in-service training programmes organized by KVS for primary teachers also focused on different issues related to the project.

The learning resource material for teachers on activity-based teaching approach was also developed by teachers themselves The teachers of the KVs modified this material with their own innovation, excited by the success of the pilot project KVS has extended this project to all the KVS schools

The efforts made by KVS and NCERT for using activity-based methods are easily visible in the KVs Recently, I got an opportunity to visit one of the KVS in Delhi I talked to some of the students and teachers which compelled me to rethink on my observations of the case of Radha.

Activity-based Approach: A Success Story

Manish, a Grade II naughty boy sitting in the front row During my visit to his classroom, he was out of his seat during most of the time. Before I could ask him about his absence I was amazed to see him returning to his seat and thereafter remaining perfectly still.

I was watching the class with curiosity, what would happen now? As soon as the teacher entered the class all the students started grouping themselves all around the classroom One group remained in the centre and Manish was in that group There were four children in each group sitting on the floor and four small desks in front of them making a common platform. The teacher gave them some flash cards of spelling words and alphabets. Each group was given different types of flash cards. I was not able to understand the rationale behind this. All the children were playing and discussing with each other about the cards given to them. I was just watching the classroom activities as a non-participant, I was also watching Manish, who was full of energy and confidence and dominated the group.

The teacher started moving from one group to another without interfering but observing the activities which the children were doing After 20-25 minutes the teacher developed assignments using flash cards similar to the cards given to the children Each group was given a different assignment based on the activities they had undertaken in that particular class. The whole class was enjoying the activity. The atmosphere was full of encouragement and pleasure even the slow learners were taking a lot of interest (this was told to me by the teacher). After completion of the activity and assignment, I knew more about the activity and methodology adopted by the teacher in the class.

There were many questions in my mind right from the beginning. How was Manish made a serious learner?, How were the activities decided and how were the activities distributed? I started searching for answers to these questions from the concerned teacher and other teachers. I asked a basic question '*In normal class where traditional methods are used, only one subject topic is taught*', however, you have distributed a different activity to each group She remarked '*each group has been given a particular activity depending upon the competencies to be developed.*' These are given first group-wise and then to other groups to repeat the same activity The activities are rotated so that children of each group get an opportunity for participating in every activity. I talked to the teacher about the learning behaviour of Manish. The teacher told me—initially Manish was a shy child and afraid of teachers but now he is a totally changed. I talked to some children also The response was far above my expectations. The children even contributed to engage themselves with the activity even after its completion. Many of the children were not willing to leave the school even after closing hours of school I heard children saying *Madam! wait .. we will go late.*

The case of Manish is an excellent example of active involvement of children in the teaching-learning process The children learn more when the learning burden is reduced in the form of rote learning and memorization as practiced by most of the teachers If learning could be made an enjoyable experience for children, then it is bound to give excellent results. As Robert Gagne has rightly said '*We as teachers have not to teach but to create conditions for learning*' Activity-based teaching approach is a child-centred approach, which equips the teachers and children for creating conditions for effective learning. The experiment/experiences of KVs totally changed the perception and beliefs about use of activity-based teaching approach at primary level The other school systems may adopt the principles of this. However, experience has shown that it requires a collective and collaborative efforts on the part of teachers, educational administrators, teacher-educators and teacher-training institutions.

Activity-based teaching approach is about providing effective and efficient, specially designed instruction that meets the educational, social and emotional needs of children All the people working in the field of primary education should be committed to find ways for effective and burden-free learning to obtain better outcome. We hope that no one questions our commitment to finding ways to help children succeed at primary level in school settings

Teaching of Concepts Associated with Resources

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In the primary school set-up a teacher is required to teach a variety of subjects, ranging from Language to Mathematics to Environmental Studies He is master of none of these subjects He has the most unenviable job i.e of catering to the requirement of these curricular areas on the one hand and interest and ability of the child on the other. The following pages give some of the methods which may be used effectively to teach concepts associated with resources and their development, a topic related to Environmental Studies

EVERYONE has needs Some needs are basic, essential for the survival of man, some are not so basic For food, clothing and shelter, man uses land, rocks, water, forests fibres, minerals, etc All these things are natural resources. As human knowledge advances and scientific inventions take place, the varied use of resources increases. Man being the most intelligent of animals uses natural resources in a variety of ways.

India is rich in natural resources The natural resources are land and soil; flora and fauna i.e. plants, animals; air; water. Some of the resources are renewable, while others are non-renewable Since some of the resources are non-renewable and some cannot be renewed the utilisation of the resources has to be done in a planned manner. Apart from natural resources the country is also rich in cultural resources.

The progress and prosperity of our country depends upon proper utilisation of various resources. While utilising them we have to consider the interest of the whole Nation. As the country is large, the resources are vast and varied. With a great many resources and their balanced utilisation, we can make our country strong and prosperous.

Major Concepts

1. Anything valuable and useful to man is a resource.
2. Nature has a variety of resources.
3. Land and soils are the resources that control the nature of agriculture and production of crops
4. Water is used for a variety of purposes
5. Forests provide us useful timber and other products
6. Animals supply us milk, meat, hides, fur and many other materials
7. Oceans and seas are abundant sources of fish
8. Minerals are used to produce a variety of things.
9. Coal, petroleum, water and atomic minerals are the major sources of mechanical energy.
10. Man endowed with physical and mental power is also an important resource

Concept 1. Anything valuable and useful to man is a resource

You can teach this concept with a discussion on the needs of man and their source areas Needs are of two types· basic and higher Food, clothing and shelter are basic needs, and education, art, culture, means of transport and communication, etc. are higher needs Ask your pupils to distinguish between basic and higher needs In order to satisfy each type of need some materials have to be used

Establish a relationship between consumable items and their source areas on the line indicated below

Ask your students to make a list of other items and their sources. Do the people get them in the form they consume? Are all the items processed before consumption? Where are they processed and why are they processed?

Consumable items	*Sources*
food	land
fibre	land
brick	land
wood	forest
fish	water
oxygen	atmosphere
cloth	fibre
furniture	wood

Emphasize that a resource is a useful thing It is useful to man—directly or indirectly. A piece of rock is useful to man for construction of building A lump of coal helps him in cooking his food or gives him heat energy.

Discuss how the utility of a resource differs from time to time and from place to place. Cite the example of the Damodar River It was a havoc for West Bengal in the past, now with the construction of a dam it supplies electricity to industries and railways Give the learners other information about the Damodar Valley Corporation So long a forest is inaccessible, its utility is minimum. As soon as it is linked with means of transport, it becomes more useful Cite and discuss other examples

Concept 2 Nature has a variety of resources. Discuss the nature of mineral, forest and water resources in terms of their exhaustability and renewability. Ask the following questions. How long can you get coal from the mines? Can forests be able to produce timber again in six to eight years? Are river or tanks full of water each year?

Ask them to write about the utility of the following resources in two to three sentences each·

Type of resources	*Utility*
Land	
Animal	
Water	
Forest	
Sea	
Mineral	
Power	
Man	

Arrange a discussion on the necessity of conservation of resources Encourage them to participate actively

Concept 3 Land and soils are the resources that control the nature of agriculture and production of crops

Draw a land use sketch-map of the area where your school is situated Make a list of various uses shown in the sketch, such as croplands, grasslands, school, community centre, residential areas, health centre, water bodies, playgrounds, roads/railways, etc Show a generalised land use map of India, discuss it and ask your students to mention the areas of various uses as follows -

Land use		*Areas*
Rice lands	–	Middle and lower Gangatic plain, Brahmaputra plain, eastern coastal plain, western coastal plain.
Wheat lands	–	Punjab, Haryana, Western U.P., Madhya Pradesh, etc
Tea lands	–	
Coffee lands	–	
Forests	–	
Grasslands	–	
Water bodies	–	

Help your students to answer the following questions —

Why are rice and wheat grown mostly in the plains of India?

Why are most of the forests concentrated in the Himalayas?

What type of land is most suitable for cultivation?

Why are the Himalayas not an important rice growing area?

Discuss the role of soil in the cultivation of crops Explain the meaning of soils and various factors engaged in their formation You can draw a sketch to show various layers of soil

If possible, take your students to a nearby area and show them some varieties of soils in the field Discuss how soils can be classified according to their colour and texture

Explain the meaning of soil erosion by showing this in the field or by pouring water on a heap of sand. Discuss a few methods of controlling soil erosion.

Concept 4· Water is used for a variety of purposes

The students know various uses of water. Test their knowledge and discuss other uses of water

Where do you get water from?—Rainfall, well, tank, river. Draw on the blackboard a sketch/diagram to show a hydrological cycle (Water cycle) Explain how water moves constantly from ocean to air, from air to land, and from land to ocean again. Also discuss the process of evaporation, condensation and movement of water on land Emphasize that total amount of water on earth is limited. Only a small amount of this is fresh water.

Hang a large map of India showing major

your food? What do you use to get light? Why do you eat? When do you get hungry first—at rest, or at play? Discuss the importance of energy in domestic life, agriculture, industries and transport

Coal, petroleum, water, atomic minerals, solar energy, etc. are used for the production of electricity. Discuss how electricity is generated by these sources. Use photographs and sketches or models to give them a clear idea Depending upon feasibility, take them to some of these places

Use a map of India showing distribution of coal, petroleum, natural gas, important rivers and some power plants based on them Ask your students to read the map and note down the locations in a simple tabular form as given below.

	Power plants		*States/places/rivers*
(a)	Coal based plants (Thermal power plants)	–	Bihar, West Bengal, Madhya Pradesh, etc
(b)	Water based plants (Hydro electric plants)	–	Satluj, Damodar, Kaveri, Krishna, etc.
(c)	Plants based on		
	(i) Petroleum	–	Aizwal (Mizoram), Kohima (Nagaland)
	(ii) Natural gas	–	Namrup (Assam), Utran (Gujarat)
	(iii) Atomic energy	–	Kalpakkam (T N), Trombay (MS)

Concept 10· Man endowed with physical and mental power is an important resource

Create a learning situation in the following manner. There are productive forests, rich minerals, perennial rivers and fertile lands in an area, but the people, there, are lazy, unhealthy and uneducated What will be the fate of that country? Will people get enough food? Will they have a good life? What should be done to make natural resources useful?

Examine the size of India's population and the pattern of population distribution Use a map showing density of population With the help of students highlight the distributional characteristics Why do most of the people live in the plains? Why do people concentrate in cities? Why are the high Himalayas and arid lands of Rajasthan sparsely populated? How can more people be attracted to these areas? How can these be developed? Clarify that all the people are not resources Some are resources and some are liabilities

Discuss the importance of machinery, manpower, education, health and nutrition in the development of an area Human resource includes knowledge, skills, aptitudes, initiative, resourcefulness, capacity for sustained work, right values, interests, attitudes and other human qualities which help higher production and accelerated economic growth To know the skill of manufacturing machines and driving, what should we do? How can we eat nutritive food and remain healthy? The teacher should discuss these problems by taking local specific examples.

Ask your students to make lists of children of their locality under the following heads: children (i) who do not go to school, (ii) who remain unhealthy and sick, (iii) who have bad habits, and (iv) who do not play at home You may ask them to collect information about the number of living rooms and the number of family members living in them Hold a discussion and highlight the desirable aspects of these activities.

Conclusion

You must have noticed that in order to teach different concepts a variety of methods have been used The use of different methods removes monotony and helps in clarifying the concepts Discussion, question-answer, comparison, contrast, observation, field trip, map reading, preparation of tables, establishment of relationship, and explanation methods have been used to teach the concepts These methods are suggestive and are not complete You may try some other methods and see the results

Social Awareness and Integration of the Visually Handicapped

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There has been a discussion for the last many decades over the issue of integrating persons with visual handicap in society. However, in India, the success in integrating visually handicapped persons in society is far from satisfactory Social prejudice against blindness, economic hardships on account of unemployment, ignorance of potentialities of the visually handicapped, changing value system, resistance to change, etc. are some of the impediments in the process of integration. Social awareness of the potentialities of visually handicapped persons is an important element in the process of integration. Social awareness, however, is a two-way process as both the visually handicapped and the society need to be aware of their responsibilities and duties towards each other Professionals working in this area have responsibilities to concentrate on ways and means to overcome difficulties in the process of integration, and facilitate this process right from the beginning.

MAN is a social being as his needs can only be met in society. If this proposition is accepted as a major premise, then the minor premise "the handicapped are also human beings" follows Thus the inevitable conclusion is "the handicapped are social beings " If this syllogism is accepted, the integration of visually handicapped persons in society is a necessity, not a choice Any approach which emphasizes segregation is bound to be faulty, no matter what justification is given. Fish (1989) said, "Completely separate special education, however severe the need, is a very inadequate preparation for life in the community". However, many professionals think that special school approach for the education of the visually handicapped is a way to integration They erroneously maintain that the visually handicapped can best be prepared for integration in special schools.

Present Situation

More than five hundred million people in the world today cannot take full part in the ordinary activities of daily life due to some form of physical, mental or sensory disability At least one hundred and fifty million of them are children One child in ten is born with an impairment or acquires a visual, hearing, mental, physical or psychological disorder leading to permanent disability (Rehabilitation International and UNICEF, 1992) Visual handicap is one of the serious disabilities which puts an individual into a handicapping condition Quoting the World Health Organization's figures of visually impaired and blind people, Brohier (1989) stated that the total number of blind persons in the world are in the range of 27-35 million and an equal number of people are estimated to be suffering from severely reduced vision Some two million of the world's blind population are estimated to be children, of whom 80 per cent live in Africa and Asia

Is it possible to let this population live in segregation? Certainly not and therefore, integration of this group of people is not only desirable, but indispensable.

A complete survey of disabled persons in India has not been conducted so far. However, according to the report of the Indian Council of Medical Research (1974) there were 8.8 million visually handicapped people in India. The National Sample Survey Organisation (NSSO), which defined individuals with visual handicap as those people who cannot see anything at a distance of one metre, estimated the population of visually handicapped people in India to be 3,422,734. Out of this population, 0.12 million fall in the age range of 4-15 years (Government of India, 1986) In 1991, some ophthalmologists interviewed on television estimated the number of visually handicapped people in India to be around 12 million In a latest sample survey, as was informed in the television news of 6 November 1994, the number of handicapped population is estimated to be 14 6 million. Variations in figures of the visually handicapped persons are partly due to the socio-cultural factors and partly on account of non availability of exact figures Some people in India do not want to disclose that any of their family members are disabled on account of the stigma attached to disability However, the magnitude of the problem warrants serious effort for integration of this group of persons.

What is Integration?

The concept of integration is an area of scholarly debate, though there is a consensus over some elements of integration. According to the American Vest Pocket Dictionary, integration means to bring into a whole. Booth (1987) defined integration as the process of increasing the participation of children and young people, the families, communities and teachers in the educational and social life of ordinary schools and colleges Hallahan and Kauffman (1991) maintained that integration involves the movement of people with disability from institutions to community living, from special schools to regular public schools; from special classes to regular classes. A comprehensive definition of integration was given by the United Nations covering integration at every stage of life. According to the United Nations (1983) "Whenever pedagogically possible, education should take place in the ordinary school system, work be provided through open employment and housing be made available as to the population in general" (p. 7). All these definitions emphasize that the gap between the non handicapped and the handicapped should be abolished and discrimination against the handicapped should be abrogated

Impediments

There are obstacles in the way of integration of the visually handicapped in society. Some of the impediments, which inhibit the integration of the visually handicapped in society, are social prejudice against blindness, economic hardships, ignorance of potentialities of the visually handicapped, changing value system, and resistance to change.

One of the major impediments that prevents integration of the visually handicapped in society is the inherent prejudice against blindness Blindness is considered a serious disability and an individual with visual handicap is thought to be incapable of contributing enough to his family and society This age-old prejudice has repeatedly been proven wrong, but, perhaps, not to the extent that society could change its attitudes towards blindness. Negative attitudes are also reinforced by stereotypical beliefs expressed in literature. Many individuals and organizations also contribute to perpetuate this prejudice for petty gains All these practices help in perpetuating negative attitudes towards the visually handicapped. Negative social attitudes are, perhaps, the stumbling block in the process of integration Helen Keller once remarked that not the blindness, but the attitudes of the seeing towards blindness is the greatest burden to bear

The second impediment in the process of integration is the ignorance of society about potentialities of the visually handicapped If society is educated about what this group of persons can do, and how they can contribute effectively to the progress of society, the negative attitudes towards the visually handicapped can be reduced to a great extent

The third impediment to integration of the visually handicapped in society is poverty Eighty per cent of the Indian population is considered to be living in poverty Therefore, economic contribution from each member of the family is expected. The visually handicapped persons are considered a liability due to their visual disability However, they can become contributing members of families and society if they are given an opportunity for education and training The majority of people in India are ignorant of this fact.

The fourth impediment to integration of the visually handicapped in society is the changing value system The handicapped received care and support from their families and religious institutions in the past. People were religious and caring and wanted to help this group of persons in their rehabilitation. However, this attitude has undergone considerable change in the last few decades Moral values are changing and people attach greater importance to the materialistic way of living than to an idealist life. Thus, people are less inclined to follow traditional values, such as helping and caring for others. Therefore, the visually impaired receive less attention from society which is an impediment in the process of integration.

The fifth impediment to integration is resistance by some people to change. This is true of individuals, organizations and of society. For example, many professionals working in special schools do not subscribe to the view that integration of the visually handicapped should take place at the earliest stage. This resistance to change not only delays the process of integration, but also impedes the two-way flow of communication between the visually handicapped and the society.

Integration of the visually handicapped is a two-way flow. Two pertinent questions need to be answered to justify the proposition that integration of the visually handicapped is a two-way flow. These are 1. why is integration of the visually handicapped necessary and 2. how this goal can be achieved. The answer to the first question is given in paragraph 1 of this paper, i.e. man is a social being and if the handicapped is a man, he is social being. Thus, integration of the visually handicapped is a necessity.

The answer to the second question, however, needs discussion. The integration of the visually handicapped is a two-way flow, because the relationship between the society and individuals is like the whole and its parts. The population of the visually handicapped is a part of this whole. How can a whole claim itself be complete unless it is formed by all of its parts? If anyone says that the whole is complete without its parts, he or she commits a logical fallacy. In other words, the society is incomplete unless it integrates all its sections into it. Similarly, a part of the whole does not have the same independent value which it will acquire when it is associated with that whole which it is a part of. In other words, both individuals and society need each other for their fullest development. Therefore, the visually handicapped and society need to develop positive attitudes towards integration of the former. If the logical approach of the philosophy of whole and part is accepted, the integration of the visually handicapped is an indispensable goal. This goal of integration can be achieved through sincere effort by the society as well as visually handicapped persons. The following steps may be taken to promote a two-way flow·

Opportunity in Neighbourhood

A visually handicapped child should be encouraged to mingle not only with family members and relatives, but also with neighbours and their children. This will help neighbours and their children to understand that a visually handicapped child is no different from other children. Most of the problems can be overcome with the help of others. A visually handicapped child will also learn many things from other children. This natural integration among children will solve most of the problems related to education and employment of the visually handicapped. Non-handicapped children will learn through their experience what a visually handicapped person can or cannot do.

Opportunity in School

School is a place where all children get opportunity for learning. Learning has a wide connotation. It includes both academic and non academic knowledge. The presence of a visually handicapped child in the classroom will provide an opportunity to all children to understand the abilities and difficulties of the visually handicapped child. Thus, the process of integration is widened in school. Teachers and parents also benefit from mainstreaming of handicapped children as they develop greater understanding for the handicapped. Hegarty and Pocklington (1981) conducted a study which revealed that there was a broad consensus among teachers, parents and pupils that they had benefited in terms of social and emotional development through integrated education It promoted the realistic acceptance of individual handicapping conditions Laying emphasis on mainstreaming Johnson and Johnson (1986) stated.

> When cooperative learning is implemented effectively, positive relationships between handicapped and non handicapped students result. Far more positive interaction between handicapped and non handicapped students within instructional situations and during free-time, as well as increased friendships, result from cooperative learning experiences (p. 53)

Opportunity for Employment

Mainstreaming of the visually handicapped in school can promote an understanding amongst the non handicapped and handicapped children. This understanding can play an important role in the future employment of the visually handicapped into different jobs. Economic independence is vital in the process of integration, yet, economic independence alone cannot bring integration. Positive attitudes on both sides are essential prerequisite for integration

Negative attitudes of some people towards the visually handicapped are an unfortunate stumbling block in the process of integration Some people become jealous of the progress of visually handicapped persons and they make every possible effort to discourage the visually handicapped from achieving excellence in their respective areas. This, however, does not mean that all non handicapped people are inimical to the visually handicapped, nor does it mean that all non handicapped people are jealous of the progress of visually handicapped persons, it simply implies that it happens in many places and negative attitudes are not healthy signs for integration True integration of the visually handicapped in such places becomes difficult and the real integration can take place only when there is two-way flow. It is the responsibility of all to ensure that injustice against the visually handicapped is not allowed and positive attitudes amongst the non handicapped and the handicapped are promoted. This task can be initiated and encouraged through mainstreaming handicapped and non handicapped children in schools.

Experience in the West and India reveal that handicapped persons need the support of legislation in order to seek justice. Legislation provides a deterrent against exploitation and injustice. Handicapped individuals can go to the court of law to seek justice against the practice of discrimination and exploitation. Parents of handicapped children in the United States went to the court of law when their handicapped children were refused admission in ordinary schools. The court decision was given in favour of parents and the Public Law, PL94-142 was passed by the Congress to ensure the educational rights of the handicapped (Berdine and Blackhurst, 1985).

Media support is another important factor in creating social awareness towards potentialities of the visually handicapped The media can play an important role in promoting positive attitudes for the integration of the visually handicapped in society.

Visually handicapped individuals, organizations and non handicapped individuals also have a responsibility to work for integration Visually handicapped persons should prove through their work that they are equal partners in the development of society. They should not be apprehensive of negative attitudes from all people They should judge each individual on the basis of his/her overall behaviour.

In short, integration is not a one-way process; it is a two-way flow where both non handicapped and the handicapped have responsibilities to develop positive attitudes towards each other. Moral values need to be inculcated in our day to day life and they should become a part of school curriculum This will, hopefully, help in moulding attitudes of people.

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Teaching: The Noble Profession

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The ideas of nobility and its importance are inherent in the profession of teaching But what is nobility in a profession? Teaching does not yield power, wealth, may not even fetch fame and glamour yet it gives satisfaction and an inner sense of achievement Here the authors try to analyse the concept of nobility and what it means in the teaching profession. It is examined in the context of teaching as a process of liberating the human spirit from real material to spiritual consciousness For claiming nobility of the profession the teachers must rise to the real job of ushering in the spiritual wave.

WE wish to differentiate between the ideas of '*nobility and importance*' inherent in the profession of teaching and a few other selected professions We sincerely feel that teaching is a noble profession We know that teaching may not yield power, it may not yield much wealth; it may not even fetch fame and glamour; yet it will surely give you a satisfaction of doing a noble job We guess that our readers will murmur when we will argue for the claim that teaching alone is a noble profession Let us recall that, on the Teacher's Day, everyone, right from the President of India downwards to the students, while paying homage to the teachers, do say that teaching is a noble profession If our readers agree with those feelings of respect then there should not be any resistance to go through this note. We are aware of the fact that noble persons are working in many other places in spite of the nature of their professions. In another article, the authors have sought general feedback from readers about this stand of nobility of the teaching profession Meanwhile, this preliminary thinking is being shared with other readers who are interested in similar writings.

What is meant by nobility in a profession? It is quite difficult to answer. Nobility is the opposite of meanness Do we agree to the popular assertion that nobility assumes using pious goals and pious means? A noble person does not resort to 'crooked and mean tactics', he adopts only morally and legally approved ways to reach the goals. The goals of the noble persons are impersonal, humanitarian and lasting in nature To say that a person is noble implies that he has a higher cultural attitude. He is above the "here and now" and also above the "me and mine" approaches Presence of noble persons in the society keeps alive 'the hope' that a particular society can be saved We need not miss this message

Without meaning anything blasphemous about other professions, we would compare the nobility of the teaching profession in the context of other professions like, medical, legal, defence services, and industrial professions. For the sake of this comparison, we will take all such professions in their *ideal* nature. These professions truly claim to render selfless service to the society Further, we do not say that these professions are useless In fact, we believe that all professions are useful. Instead of usefulness, we wish to focus upon the nobility aspect of professions. Here, let us further refine our statement by saying that our focus is on teaching processes, and *not essentially* on teaching personnel We wish to state that the real nobility lies in the process of teaching. This teaching process may be performed by denotative teachers or connotative teachers or persons like Gandhi, Kabir, and Buddha. All these persons are teachers when they are educating the learners and the masses. Having said this, we want to assert that teaching alone is noble Let us see why and how do we say so?

The teaching profession has many aims, in its basket Primarily, teaching is meant to help the realization of the potential of their learners It is wrong to say that teaching is limited to removing ignorance and managing inadequacies of learners Through formal and informal teaching, the learner is expected to be liberated from ignorance, foolishness and superstitions. Further, it is said that through employment oriented education, teachers help in the process of economic self-reliance of individuals, and upliftment of the society. Teaching is much more than these limited meanings. It is a positive profession. It deals with optimism It works with abundance all around It aims at nurturing the potentialities leading up to the development of good citizens and fine individuals Naturally, the teacher himself must be a well-educated, well-informed, and a well-meaning person A real teacher loves the welfare of his students more than he loves anything else The teacher helps the spiritual liberation of his pupils. All these aims are constructive in nature No human being is perfect: and hence as the teacher helps in the spiritual liberation of others, he increases the amount of his own spiritual liberation also A sort of cosmic liberation is thus expected. All these things signify the noble character of the teaching profession Now, what have we to say about the nobility of other professions named above? In their deal form, they too require a certain amount of vision and selflessness, yet the readers will find from the following comments that teaching alone can claim to be the only noble profession.

The medical profession helps in removing and controlling diseases, Disease-free body, disease-free mind, and disease-free environment, may be said to be the ambition of the medical profession But, merely a disease-free life and long life are not necessarily a good life or an enlightened one, such a life would need additional specialized inputs. Let us move on to the legal profession. The legal profession helps the maintenance of a judicious atmosphere in the society. It guards the rights and freedom of the people The police too helps the legal profession in all this. But this much falls far too short of the spiritual liberation of the society.

The defence services army, air force and navy guard the country from external aggression and many a time from internal disorders Now-a-days, the defence services help the people during colossal natural calamities and also assists the United Nations Organization for maintaining peace and order in foreign countries. Many a time, the defence forces have to, unfortunately, kill others while performing the commissioned duty Sometimes if need be, the serviceman has even to sacrifice his life Although peace is necessary for the development, but such a peace alone is not enough for higher goals of enlightenment, special additional efforts of a constructive type are necessary for bringing enlightenment The teaching processes can provide the required inputs Let us examine another profession. Engineering and industries help in the economic upliftment of the society The industrialist works for providing comforts and necessities. He need not perform any of the spiritual actions However, no one can stop an individual industrialist to voluntarily enter this domain But spiritual liberation is not expected from him

We thus find that the general development of the individuals, the spiritual enlightenment, and spiritual liberation of the people are the exclusive aims of education, therefore, the teaching profession alone can claim to be a noble profession Let us conclude by saying that such a claim about mobility would demand a high price tag Real nobility asks for the responsibility of spiritualising the society by the teaching professionals The aims of education sometimes expressed in the form of provision of schooling, 3Rs, and high achievement are narrow and may be false These aims will not bell the cat. Teachers must rise high and do the needful for the claimed nobility Teachers must develop a new kind of self-esteem in themselves There is no need to clamour for social respect, and professional status. These things would follow if we perform well for our spiritual roles. Full vigour and conviction are required. If there will be continuous spiritual darkness and spiritual slavery anywhere, then the teaching profession must accept its responsibility

The wave-scenario given in this paragraph could be avoided We do not know why do we retain it here. May be, it is retained for ensuring introspection and self-caution for the teachers In the next few years, the globe will be entering into the fourth wave termed as *consciousness wave* Alvin Toffler talked of three waves. the first wave of agriculture, the second wave of industrial wave, the third wave of information. The three waves will hopefully be followed by the fourth one which is termed as the spiritual-consciousness wave. Teachers have to play a very significant role for ushering in the spiritual wave

Planning of Curriculum in Social Sciences

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> *The development of curriculum in social sciences is a complex and intricate process It involves a lot of thinking and requires an in-depth knowledge of the subject-matter It is true that in our country the final decision of what should be the curriculum for a particular class is generally determined by a committee of specialists but this however does not mean that the teachers are not associated*

THERE has been a realization that in order to make the planning of curriculum scientific and child-centred, the association of the teacher is very crucial. This is because it is the teacher who implements and transacts the curriculum in the class. In the teaching-learning process he/she is the best judge to know.-

—What should be the content of the curriculum?
—What aspect of the subject-matter should be retained, highlighted, and what should be deleted.
—Is the language used simple in style and expression?
—Does it take into account the mental ability of the child
—Does it impart the necessary values e g , in a subject like social sciences there are numbers of examples which throw light on values like bravery, sacrifice, interdependence, feeling of brotherhood, national integration, patriotism and so on.

Thus, along with the experts and specialists the association of the subject teacher in planning social sciences curriculum should be made from the initial stage.

The areas of concern in social sciences being very vast, it require a lot of skill to try and limit its content according to need, interest, grade and mental ability of the pupils A good curriculum for a particular class is that which is convenient, well-planned, well presented and in proper graded sequence. The objective of the curriculum is to make possible by wise planning the fullest and most fruitful growth of the subject to enable the pupils to acquire relevant knowledge, understandings, skills, attitudes and values

Principles of Selecting Content

The curriculum should help in achieving the aims of teaching social sciences The content selected should help in achieving certain well laid out aims of the subject i.e.,—promotion of national integration, promotion of peaceful co-existence secularism, non-violence, sense of national pride, equality tolerance, etc It should be appropriate to the age and ability of the pupils. The curriculum must answer the needs of a particular age group. The materials selected must be up-to-date giving the pupils knowledge of current discoveries, and new interpretation of facts The content of the study should have a functional relationship. Taken together the content of the study should appear as an organic whole and not as isolated experiences

The programme of social sciences should be well planned in two directions In the first place each years course should be built on what has been done in previous years, and, at the same time, serve as a basis for subsequent work. In the second place, the entire subject-matter for each class should be connected and co-ordinated. There should also be a clear relationship between cause and effect regarding social and historical events and their impact on society

Another area that should be taken care of is to establish close relationship between socio-economic and political variables or facts, this is because no events occur in isolation It is crucial that the context and its interrelationship with social and economic realities be constantly examined while discussing any event

The study of social sciences must be wide and comprehensive It should be such that the pupils acquire knowledge about the story of humanity starting from the local events, proceeding through regional, national and ultimately the world. This would enable the pupils to comprehend the present world of human thought and activity in the context of the past Human endeavour is continuum

The curriculum selected should lay emphasis on national and world unity It should lay stress on the idea of national unity and unity of mankind. It should bring out not only the political, social, cultural and economic factors and aspects of the different countries that are studied but also the process of intercommunication and co-operation between different nations If should serve as an instrument of social regeneration

The curriculum should be gender sensitive
In order to make the curriculum gender sensitive emphasis should be laid on the contributions made by women, in different periods and ages Also, the existing social mileu and the various hardship's faced by them needs to be mentioned. How did they inspire other women needs to be focused. There are numerous examples in history particularly in the freedom struggle where women like Sarojini Naidu, Annie Besant, Kasturba Gandhi and many other women not only contributed to the Indian freedom struggle but also in their own personal lives as well as the cause for which they constantly fought i.e uplifting the status of women

The curriculum should be Environment sensitive
The subject-matter of history contains a lot

of examples where conservation and protection of environment found due reflection. Nature worship and living in harmony with natural surrounding was constantly upheld by our seers and *Bhakti* saints The two great epics *Ramayana* and *Mahabharata* constantly make reference to ashram's (hermitages) located amidst natural surroundings, which reveals that people during the period believed in living in harmony with nature.

Observance of Small Family Norms

Population education component appropriate to the pupils of different age-groups needs to be reflected in the curriculum at different stages of education Significance of overpopulation and its impact on our economy, natural resources, and quality of life should be highlighted The natural resources are limited hence their judicial use should be emphasised

Apart, from the above listed principles a good curriculum is one which is flexible and organized according to the needs of pupil and requirement of time Planners should constantly keep in mind what changes are taking place in society and then try and relate them to the past as also the events that are likely to occur in future, this would give a clear understanding to the pupils about the concept of change and continuity It would also make the subject-matter relevant, interesting and lively.

How to Make Homework a Pleasant Exercise

N N PRAHALLADA
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RIE, Mysore

Homework is a necessary tool to know the progress of the children. Now the situation is such that instead of a challenge it is becoming a burden on the part of the children. Here the author gives some suggestions as to how to make homework a pleasant exercise.

OPINION and practices with respect to homework vary widely. Arguments are both for and against giving homework. There are some who vehemently criticise the quantum of homework given in schools, especially in some English medium schools. Individual parents have complained that excessive homework retards the child's all-round development, arouses rebelliousness, contributes to careless work habit and promotes unwholesome attitudes in children towards school and even towards life.

Whatever may be the criticism, in general, parents approve of homework as a measuring tool to know the progress of their children. Homework, if properly understood, skillfully planned, intelligently assigned and sympathetically checked, will result in meaningful progress.

In most Indian schools homework is mostly written without any novelty. That is the reason why to most pupils homework is not a challenge but a burden.

Problems of Below Average Students

Normally the bright and enthusiastic students do homewrok themselves and are regular. The below average students find homework an uphill task. Some students (specially average ones) take parents or brothers/sisters help in doing homework. Some students give lame excuses for not doing the homework in the following way "I lost my notebook", "My notebook is over, I have to buy a new one, I was absent and did not know about the homework", etc.

Some children refuse to do homework on the pretext of watching television or video Each teacher punishes the child in his/her own way

Role of Parents

The parents have a positive role in helping children to do homework. At home, children need proper atmosphere for study. When a child sits down for doing homework or studies there should be no distractions at all. Loud music, movie on TV or video diverts the child's attention. Just like all of us have moods, similarly children also have their moods. We should appreciate and understand this.

Some parents are harsh towards their children This type of behaviour upsets children Often parents compare their children's behaviour with others. This is not liked by children and they may rebel. Therefore each child should be viewed as a separate individual with a different personality profile.

Children brought up under harsh parenting style tend to have low self-concept and self-control. Their tolerance for frustration will be low and their achievement motivation declines. Therefore, parents should understand child's psychology thoroughly.

Many a time teachers give too much of homework and as a result children develop hatred towards it.

Suggestions for Parents

—The child is responsible for the homework and not the parents. Therefore the parents role is just to encourage the child

—At any cost the child should not be disturbed while doing homework Never ask your child to help you when he is concentrating on his studies

—Always encourage your child. Refrain from making comments like "you don't know how to sit, how to hold a pencil, you cannot achieve anything in life, it is better you stop studies", etc A mistake committed by a child should be carefully corrected.

—Many a time children pick up certain mannerisms from their classmates and friends like putting caps or pens in their mouth, chewing rubber, shaking legs, putting fingers into their nose/ears etc., while doing homework It is always better not to comment at that time After completion of the work, parents can explain politely about the untidiness of those habits

Suggestions for Teachers

—Homework should be properly organised to provide novelty so that the child learn to solve new problems with the help of the knowledge gained in the classroom More schooltime should be devoted to the guidance of meaningful learning. Students should be encouraged to do more reading and studying of the kind that will have continuing value in later life

—At school as far as possible students should be asked to keep a minimum number of pages in notebooks for various subjects to avoid wastage of paper Thick plastic paper can be used to write/draw the outline of maps and geometrical figures, which can be erased to draw new diagrams on the same plastic paper This will certainly help prevent wastage of paper, especially in today's context of paper scarcity

- Instead of writing homework in notebooks teachers can encourage children to write the homework on loose sheets and these sheets can be lodged safely in a file. This will help the teacher to evaluate homework easily and inspecting officers can inspect a child's homework in all subjects maintained in a single file This is easy for children to carry home
- For fast and slow learners home assignments should be given according to their ability and capacity It should bring thrill and joy to them

Conclusion

Lastly it may be said that unless homework is made a pleasant exercise there is every possibility that it may become oppressive and inflict incalculable moral, intellectual and physical injury on pupils.

Children's Literature and Scientific Attitude

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LITERATURE has a unique importance in individual and natural life. Literature is related to and directly concerned with the human heart, and its main task is to improve humanity. Whereas science and technology aim at improving the materialistic world, literature aims at improving the social and cultural aspects of the world.

We say that childhood is the most important stage in one's life It is on this stage that the development of personality depends In the same way children's literature is the most important not only from the point of view of improving the ability of children in appreciating literature but also to improve literature as a whole. Some salient features of children's literature are

—touches the tender hearts of the children and leaves a lasting impression on them,
—helps to shape the destiny of the children;
—helps in the assimilation of ideas;
—plays a key role in character building,
—provides better avenues to acquire more knowledge of the world;
—develops reading habits in children and creates more and more concepts with perfection;
—entertains, gives pleasure and provides mental satisfaction

We all know that interest is an offshoot of curiosity and it develops as the curiosity increases. Curiosity is an instinct of human beings and it is a natural phenomenon. Interest can be created and sustained in a particular way and direction. Interest leads to good attitude and to aptitude. When a child gets a suitable answer to its question, then the curiosity of the child increases. If the child goes on questioning and suitable answers are provided, the child acquires more curiosity. This leads to develop better interest To develop interest in any particular matter is based on the motivation given by the parents, peers, teachers

teachers and the environment Sometimes, stories of wonder, adventure, soldiers, national leaders and scientists told in a manner understandable to young children leads to general awareness and more information and knowledge about life This knowledge, in turn, would help shape their personality without hurdle. Fortunately, printing technology has come as a boon to the development of children's literature. The work of the Children's Book Trust (NBT) stands as an exception so far as the development history of children's literature is concerned Later on the NBT, the Publication Division and NCERT joined the stream These are all government financed bodies. Literature produced by these organisations is commendable. They are the pace-setters in this area in the country In addition to these there are good number of private publishers who are exclusively engaged in producing children's literature The result is that there is no dearth of good children's literature in the country Even daily newspapers, periodicals and magazines have started sections on children's literature But the main concern is that how many children do read other literature apart from that prescribed in their course of study. No doubt every school in the country has a library and a good amount of money is sanctioned every year for the purchase of books, but rarely children are seen using the library. Here comes the role of a teacher to motivate children to use the library for general awareness and creative thinking.

Does the present literature contain adequate variety? If we see the children's literature available in the market, the majority of it will be in the form of tales of one kind or the other Literature in the area of science and science fiction is very limited Probably, the reason can be that we do not have writers who are exclusively devoted to this area Moreover, we do not have the publishers who can patronise such a genre of writers and allied workers They are more concerned about the money spinning operation than the quality of the work they produce

Coming to the production stage, there has been a marked improvement in illustrations, layout, get up and printing. Excellence is yet to be achieved so as to make it comparable to the production quality of the literature being produced in advanced countries However, the production quality of the major portion of children's literature is far from satisfaction Many a time it is even repulsive The reason being accorded to the low quality of the production of children's literature is the high cost involved and inability of the consumer to pay such a high cost The high cost of children's literature can be reduced considerably if we try innovative methods The major cost is on the price of paper and on the production of illustrations Why restrict the publication of literature in one only language (i.e. Hindi), it can be published in many languages simultaneously, thereby, pooling the cost of production on illustrations, etc This can be done through a cooperative effort. May be, the publishers association or government bodies like the National Book Trust of India, National Council of Educational Research and Training can supply paper at subsidised rates and get the work done through private publishers The quality of our print material is so inferior that hardly any outside country borrows our material.

As a teacher we see that the reading interest lies on the following external and internal factors of the book

Size of the book: Generally children like 1/4 crown with an attractive cover page.

Illustration. Books which have more illustrations are liked by the children They (6-9 age group) like pictures of birds and animals in colour of bigger size A book without illustrations does-not attract children, neither children have any interest in it.

Printing types. The printing type, used in the book also accounts for the interest Children may read with interest when the type is not less than 16 point

Paper quality: The paper quality, thickness and the colour of the paper also contribute to interest White paper and thicker quality may gain .popularity. Besides, attractive cover pages with attractive pictures will count a lot in getting better reactions about the book and thereby motivate the child into reading the contents

Language used: The language used is an important factor in children's literature Reading interest can be developed only by the style of the language used in the book The eyespan of the child, and his span of perception will also count in his use of the words. The length of the sentences and the number of letters used in a word are also important in children's literature Of course, this may vary from language to language. According to a researcher, as far as the English language is concerned, sentences which contain more than seven words will not maintain the reading interest of children. But research has not been done in most of the Indian languages

Researches have shown that the reading ability differs depending upon the age-group The child of 6-7 years can read sentences of only four of five words without joint components A child of 7-8 years can read sentences having four or five words with some joint components Children 8-9 years old can read difficult words containing dissimilar joint components The word which can be read without any difficulty may be comprehended easily But at the same time the reading interest may decrease So the length of the word and the sentence and their structure are very important factors in maintaining or increasing reading interest in children's literature. The words used have to be within the easy grasp of the children and should find place in their daily lives. Words beyond the comprehension of the children will not sustain interest But a writer cannot ignore the introduction of new words as such 10 to 25 per cent of the total words may be new and it will not create problems of reading and comprehending.

How is the subject-matter to be presented? This is the main question in children's literature

Lastly, let us consider the subject-matter. What type of subject can we select for children to read with interest? Three decades ago (in reference to India) the stories which had their origin in mythology and legends were attracting the attention of the children. But due to the advancement of science, books on science and technology are gaining more popularity among children The interest has shifted to study of literature pertaining to science. Even then the reading interest of the children for fiction, mythical stories, legends etc. has not vanished Children's literature should provide a source of constant thrill to the children for exploring the world of fantasy and the world of reality.

With the literacy on the rise and the country on the verge of universalization of elementary education, books are the best tools, weapons to bring about positive social change which would be effective so as to build the mental faculties of our children in an appropriate manner The visual media today pose a great challenge for book writers and publishers. It is essential for writers to know about child's psychology.

Piaget's work is well-known in the field of psychology. According to Piaget there are four stages of mental growth The first one which represents the first two years of life is called "Sensory motor stage" when the mental structure is mainly concerned with the mastery of concrete objects The second stage is from two to seven years which is called the "Pre operational stage" which concerns with the mastery of symbols from dreams, fantasies and the like. The third stage which is from seven to twelve years is called the "Concrete operational stage", when the children are able to learn the numbers and relations and have the ability of reasoning. The last stage which is from about 12 to 15 years called the "Formal operational stage" is concerned with the clarity or mastery of thought Since Piaget's work is age specific it can have a real direction if it is used in the making of children's books especially in India Therefore a writer should know in advance whether the child is ready for learning and for which kind of information and when.

.After studying the Piagetian theory Ginsberg and Opper have suggested that.-

(i) the language and thought of a child is qualitatively different from that of an adult

(ii) The children learn from activity therefore the books should be activity-based and activity-oriented.

(iii) Subject-matter should be matched to the child's intellectual level

(iv) Examples from a child's environment should be used as examples to which a child can relate to and not of something that a child has never seen or heard of

Sensory experiences and concrete associations which very much depend upon the nature of language, which in the Indian context is Hindi A maximum number of books should be for Hindi speaking sections and other languages and for the population from the rural areas which form approximately 80 per cent of our total population. Such books which create scientific interest among the students are not available in abundance.

Books about great scientists with their inventions should be made attractive so as to generate interests This can be done by writing them in an enquiry mode and supporting them with colourful pictures

Reading is one of the fundamental skills, which takes place right from the very beginning It is a process, a skill and an ability While reading, the reader,

—interacts actively with the text written or printed

—draws on what knowledge he/she already has stored in the memory and relates it to what the text says in the form of words and sentences, and

—derives meaning from the text

Normally the purpose of reading is to get an overall idea of what the text is all the text; to get the meaning of the text and for pleasure and recreation

Developing reading habits among pupils should be one of the important goals of education Although developing reading skill among children is, important, it may not ensure that they have developed a favourable attitude towards reading, sound reading habits and varied types of reading interests. Unless reading interests and attitudes are cultivated, you cannot bring about all-round development in the child Equally important is to ensure availability of the right type of material.

Vikram Sarabhai has aptly said, "A teacher has to provide the soil and the overall climate and environment in which the seed (the child) can grow. One has to be a cultivator rather than a manufacturer"

What can the teacher do for developing Reading Skills?

1. Help pupils to activate their receptive vocabulary by providing adequate opportunities for expression—oral and written
2. Ensure that they read a lot Reading helps not only in acquiring receptive vocabulary but also in the natural process of movement of vocabulary from receptive to productive use.
3. Encourage children to bring new words to class which they come across in conversations, books, magazines, newspapers, news on T.V. and radio. Let each of them in turn bring the word. Allow the whole class to explore the meaning of the word.

Many researches have been done in this area and findings have shown that:

—Reading interests and academic achievement of children are related

—Intelligence of a child determines the reading interests.

—The more the literacy interests, the less the anxiety

—Improvement of school library facilitates the development of reading interest.

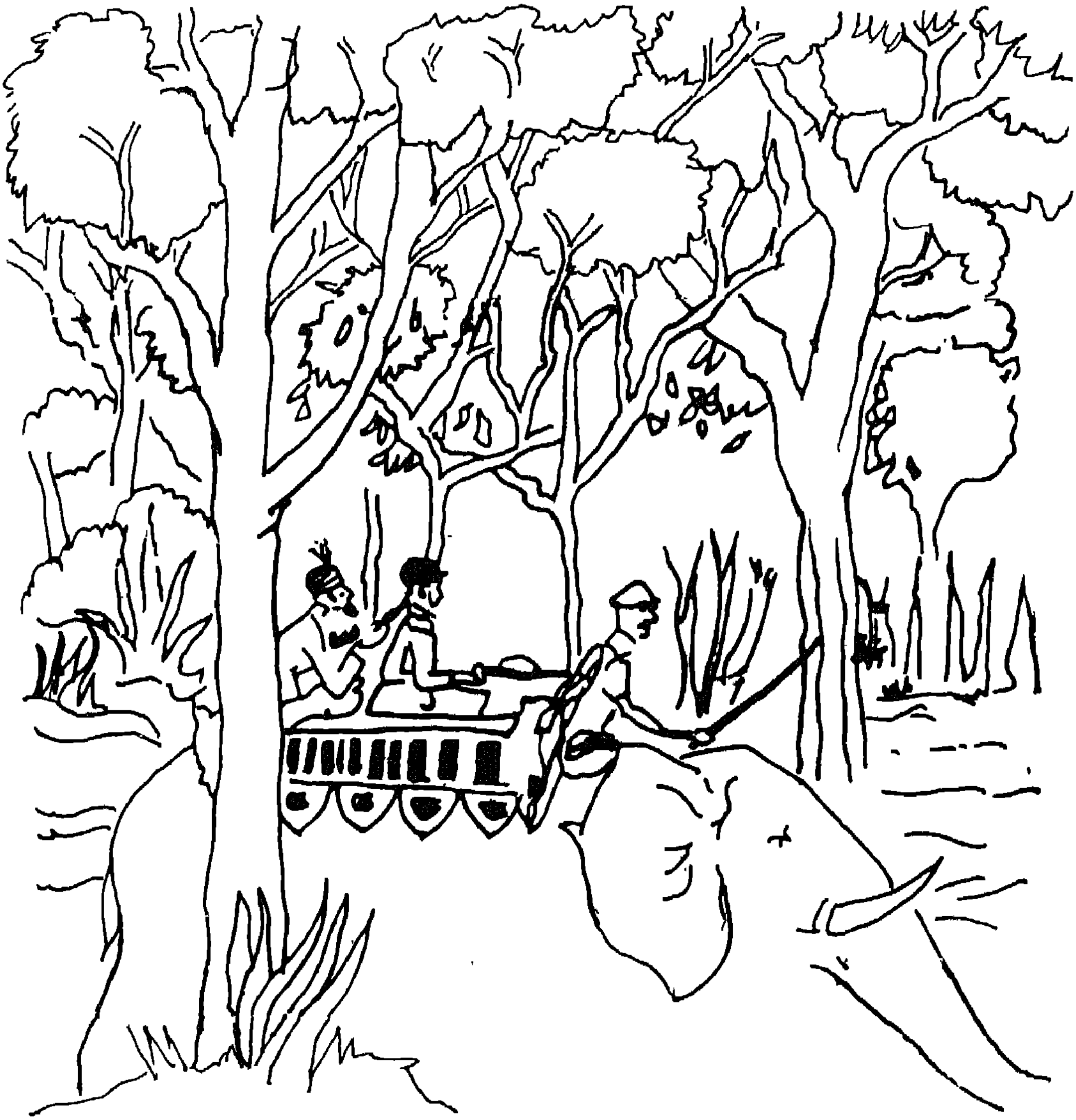
—Exposure to books beyond textbooks help in developing reading interests among children

An effective variable which deals with the academic underachievement in science of over and underachieving students is their attitude towards science. Attitude towards science is defined as the degree of positive or negative feeling towards the school subject science A student who has associated positive feeling towards science is said to like that subject and consequently makes more efforts to achieve a high score even in adverse circumstances.

In order to develop a scientific attitude, it is essential that children should be exposed to the scientific awareness through relevant literature. The science teacher must discuss with the students certain scientific based concepts, which they observe daily like–

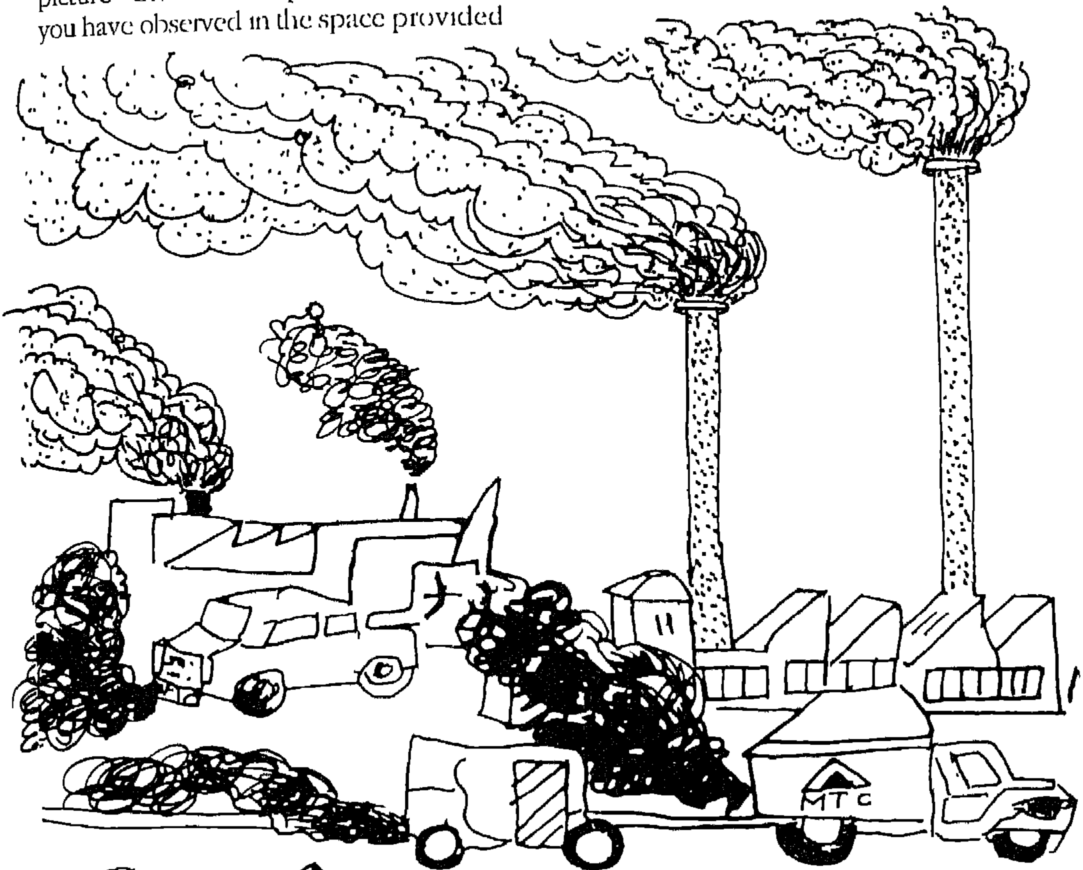
1. Why does the sun look smaller than the earth?
2. Where does the moon get the light from?
3. What is family planning?
4. What is *gobar* gas? How is it useful in our daily life?
5. How do trees prevent pollution?
6. Night blindness in children can be prevented by eating certain types of food. What are they?
7. Why is salt necessary for our body?
8. What type of immediate treatment should be given to a person who has been affected by electric shock?

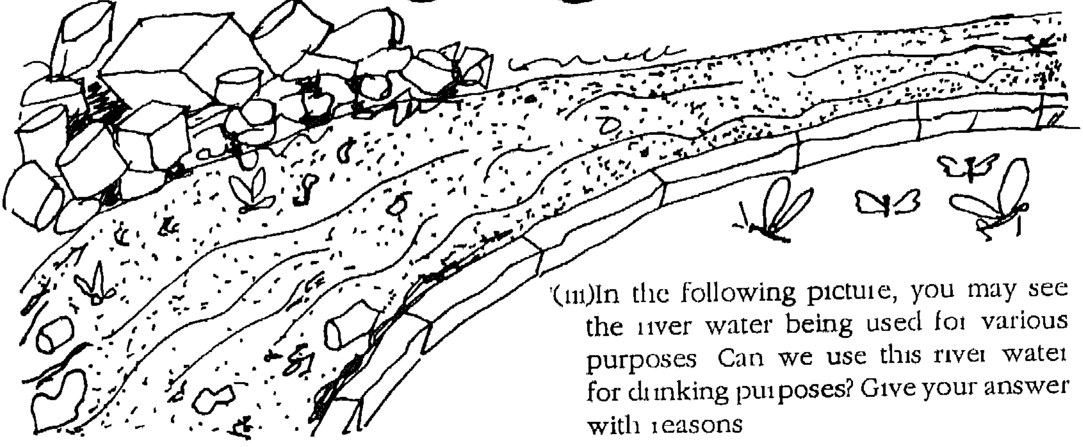
Many such similar questions can be discussed with the children to arouse their curiosity The other way can be that the teacher may discuss or a book may contain pictures and ask the children to respond to the situations like,



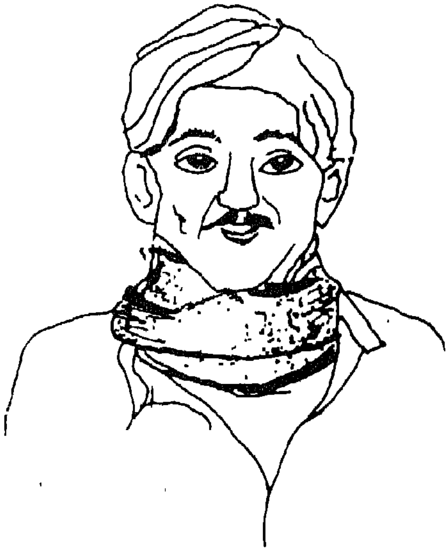
In the above picture, you may see some people riding on an elephant and going hunting in the forest Do you approve of what they are doing? Whatever your answer may be provide with reasons in a hundred words The answer may be checked by the teachers (ii)What do you observe in the following picture? Give a description of whatever you have observed in the space provided

What would happen if human beings were to live in such an environment?





(iii)In the following picture, you may see the river water being used for various purposes Can we use this river water for drinking purposes? Give your answer with reasons



(iv)In the following picture which appears on T V repeatedly, you may see a man with a swollen neck What is the disease this man is suffering from? Why do some people suffer from this disease?

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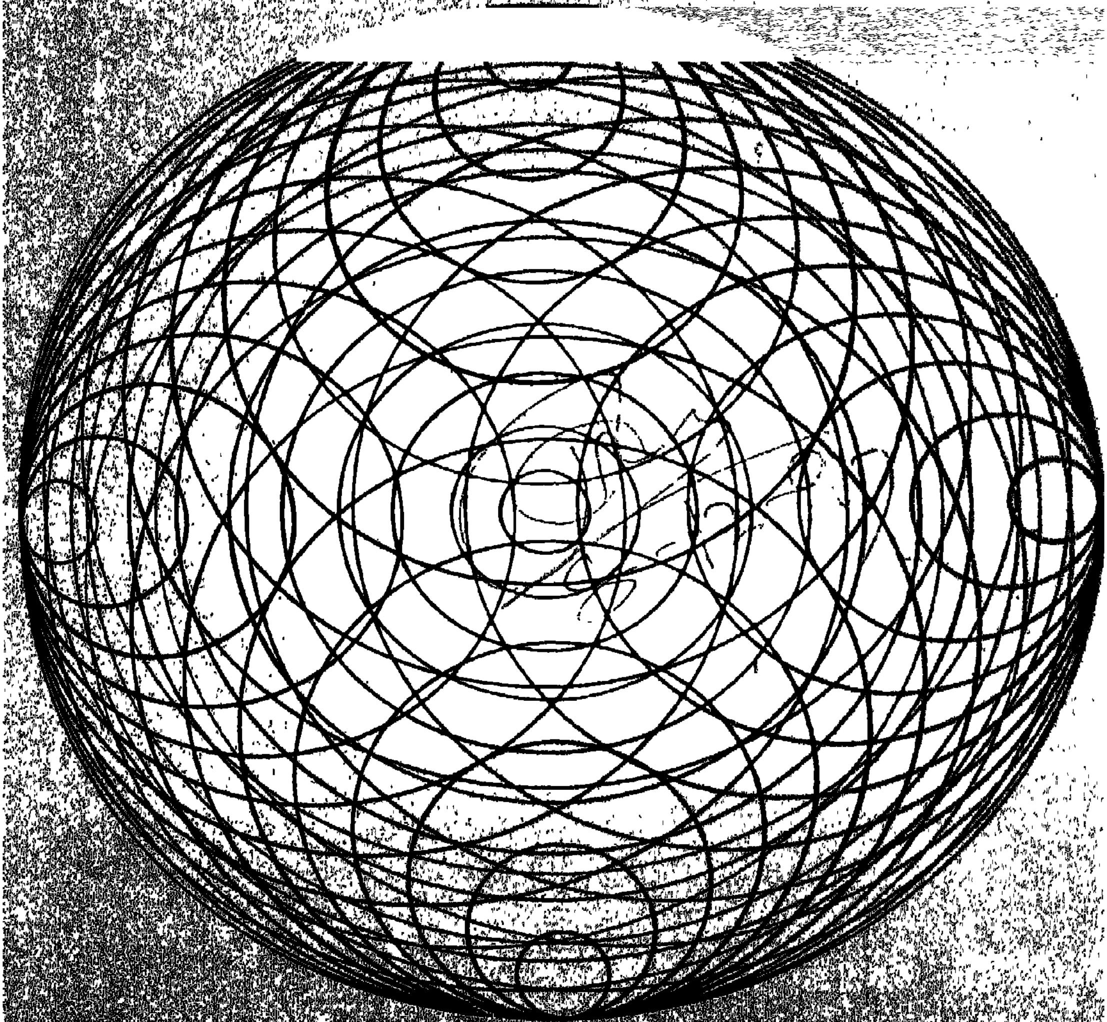

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Editorial

We are pleased to offer you July 1997 issue of The Primary Teacher. This issue focuses on the teachers profession. The teacher's role through different ages in different settings has always been different. There was the traditional concept of the teacher as *Guru*, *Acharya*, *Upadhyaya*, *Shikshak* The role of the present teacher thus stands challenged

Collaboration is not defined by the fact that everyone does every thing but rather by the fact that everyone gains from interaction Shushmita Dutt shares some similarities and dissimilarities among the education systems operating and problems faced by E-9 countries

In his article Dr. Rao emphasises the teacher's role in enhancing enrolment and checking drop-outs in the primary schools through their outside role, influence on parents and community interaction This qualitative research in eight primary schools of Andhra Pradesh shows relevance of the findings

In the many examples of in-service training through Eklavya, Shikshak Samakhya, Shiksha Karmi, FEEL, Teleconferencing, Prof Arora and Dr Singh explore practical strategies that have been developed. There is ample material with fruitful ideas for the training of beginners as well as experienced teachers

Teaching is continually changing and developing and will not look the same as it did some years ago. Dr Ediger outlines a number of strategies that are typical of what currently goes on in different classrooms at different places.

In Dr Jaireth's article, the nature of the changing world of girls education shows ways in which technology studies can be included in curriculum to prepare India for the entry into twenty-first century

Developments in research over the years have been of several kinds. One development concerns the scope of the field of enquiry. Dr. Nagpal studies the relationship of creativity and intelligence through thinking games on rural students at primary level

However, as theories have been developed, researchers have increasingly sought to confirm them by identifying and testing specific hypotheses, often experimentally Brief examination of the Lok Jumbish Project by Dr. Lalit Kishore reveals the current primacy of experimental research

ACADEMIC EDITOR

Issues of Quality and Outreach: Syllabus of Three R's for First Three Grades in E-9 Countries

SHUSHMITA DUTT

The meeting of E-9 countries on teacher training brought into focus some significant facts among the education systems operating in Egypt, Brazil, Bangladesh, Nigeria, Pakistan, Mexico, Indonesia, China and India The meeting was a follow-up of the Jomtein Meet in September 1995 where experiences were shared and country studies carried out for teacher training in core areas of Reading, Writing and Arithmetic This is a report of the presentation made at Vigyan Bhavan, New Delhi

THE recently concluded meeting of E-9 high population countries on teacher training and the Three "R"s primary syllabus at Vigyan Bhavan, New Delhi between 6-8 February 1997 brought into focus some significant areas of similarity and interesting dissimilarities among the education systems operating and problems faced by the nine countries, i e. Egypt, Brazil, Bangladesh, Nigeria, Pakistan, Mexico, Indonesia, China and India, in achieving universal elementary education. The meeting was a fall-out of the Jomtein Meet in September 1995 where it was agreed that there would be further sharing of experiences among the E-9 Countries for mutual gain and benefit Following this, country studies had been undertaken in both teacher training as well as acquisition of skills and knowledge in the first three grades of school (syllabus) in the core areas of Reading, Writing and Arithmetic Individual papers were presented by the authors at the meeting followed by intensive discussions and sharing sessions. The only exceptions were Brazil, which did not present an individual paper on primary syllabus (informal discussions were initiated by the country delegate) and the Indian paper which was not presented by its authors. Finally the papers were synthesized and analyzed very effectively by Dr M Thormann

A Commitment to Quality

An interesting point was that all the countries under discussion were engaged in educational reforms in recent past Most of these were experimental changes attempting to relate skills and knowledge with the child's life experiences and seeming to move away from the traditional content, heavy, emphatically academic curricula In Mexico *The New Educational Model* (1992) draws attention to children acquiring basic skills and abilities in reading and wrting, relating mathematics to problem solving in daily life, linking scientific knowledge with health care and to the need to protect the environment. Similarly, Pakistan has tried to lighten the learning load by introducing a simplified and integrated syllabus using a single textbook for Language, Social Studies, Science and Islamiyat The performance of children using these books is found to be higher. In Nigeria the National School Curriculum Review (1991) recommended wide ranging changes in the pedagogical inputs, instructional materials, assessment and evaluation methods in order to support higher learner achievement. These are, however, yet to be implemented.

In Indonesia the conceptual underpinnings of developments in primary education clearly identify the total development of the student as an individual, a citizen and a member of humanity.

In India, the National Advisory Committee (1992) had also examined the unnecessary learning load of the school syllabus and made recommendations for its reduction. The Minimum Levels of Learning (MLL) document (1991) is a definite step by India to ensure minimum learning outcomes for all primary level students. This approach is unique to the extent that the document delineates the final outcomes expected from primary education while allowing for the exercise of choice of instructional materials

There is, therefore, ongoing effort in most countries that attended the meeting, to review the curriculum at the primary level with a view to making it more responsive to the child's needs It is encouraging that while countries are conscious of the need to extend outreach to achieve Universal Education for All, the need to maintain the quality of education being offered has not been lost sight of.

The Constraints

The pupil-teacher Ratio

It was against this backdrop of a search for quality in primary education that the country presentations were discussed While achievements were noted and appreciated, the constraints to the achievement of UEE were discussed with concern.

Most countries except China, Egypt, Brazil and Indonesia suffered from very unfavourable pupil-teacher ratio—Bangladesh 63, Pakistan 41, India 48 and Nigeria 39 It is inevitable that the intensive pupil-teacher interaction required for effective learning to take place at the primary level cannot be possible under these adverse conditions. Further, conditions in urban schools in Nigeria and Pakistan are worse than the national averages, going upto 90-110·1 in Nigeria On the other hand rural areas in Pakistan have ratio as low as 16:1. The within country variations are wide and it is meaningless to make situational analysis according to national averages It also follows that planning of interventions will require to be worked out according to specific locations

Teacher Training

To add to the problem, the average number of years of education-cum-training required to become a primary school teacher in a majority of these countries was about 13 years (with an exception of Egypt) In many cases, therefore, the teachers are not sufficiently prepared to undertake the difficult task of teaching large numbers of primary school children in one group or even of teaching children of varying ages in a multigrade situation

This also had an adverse effect upon the teaching strategies used by the teachers While most countries had clearly documented policies with regard to the direction of classroom processes and the expected outcomes of the system, it was difficult to ensure complete adherence to policy expectations due to lack of teacher preparation For example, the Fifth Syllabus issued by the State Education Commission, China (1993) lays out in detail the task, scope, structure and methods for transacting the curriculum Indonesia has emphasized the use of different methodologies such as questioning, discussing and explaining and Egypt stressed the acquisition of minimum levels of concepts, knowledge, skills and values

Similarly, Nigeria has laid out the objectives of primary education by behavioural terms—year, term, unit and weeks. Bangladesh has identified terminal competencies, activity-based strategies and continuous assessment.

But areas of concern and key issues in the achievement of these objectives in E-9 countries remained teacher competence and motivation, introduction of modern teaching methodologies, availability of trained teachers for all subjects and support systems like school libraries and other teaching aids

Supervision and Monitoring

Another factor compromising the quality of primary education common to a majority of these countries was the difficulty of maintaining close contact with schools in remote and outlying areas This hindered pedagogical support from reaching the teacher and also allowed for a situation where very little of monitoring actually took place. A known lack of ability to effectively supervise the work of the teachers had brought about disheartening situations in many cases The delegates from Mexico mentioned that sometimes a teacher held at least two other jobs, thereby cutting into the energy and effort put into his/her teaching responsibilities.

Instructional Materials

Quality of primary education is also dependent upon the availability and standard of instructional materials This is specially true since textbooks are often the only learning resource available in the classrooms of E-9 countries. There are interesting variations across countries and country specific problems in this area

Bangladesh has a participatory system of textbook production coordinated by a committee of experts and a systematically worked out method of trialing them in 100 randomly selected schools before introducing them in all the schools A single set of textbooks is used across the country in the government schools. The system uses Bangla and English. On the other hand, Mexico has not only the official language Spanish, but also some 33 other languages and 52 dialects in which instructional materials are to be produced Mexico is conscious of the need to support regional and subgroup cultural identities and languages and, therefore, the exercise is underway to produce textbooks in all the languages in use There are official recommendations for the number of textbooks required for each subject for each class and these have to be either translated or prepared in each language

In Brazil, a number of textbooks have been approved and schools and individual teachers are free to choose from among these Nigeria, like Mexico has a number of languages and dialects in which to produce books and has introduced a system of involving local experts in writing and editing textbooks

However, all the countries felt that much is still required to be achieved in the area of textbook development and production In Indonesia, textbooks produced by private publishers were of poor quality. The problem was compounded by the fact that government- produced textbooks were in short supply.

In China, it was felt that the textbooks content were heavy placing unfair burdens upon the children It was also acknowledged that the books require more illustrations In India, studies show that readibility of many textbooks in use need to be improved. Textbooks in Nigeria were found to be generally dull, unattractive and poorly printed and illustrated The books also contained many negative gender stereo types which required to be carefully weeded out

Medium of Instruction

The medium in which primary level instruction is given is an issue closely linked to the production of textbooks and the availability of trained teachers in these languages In tribal dominated areas of India, for example, attempts are being made to develop a link or bridge language between the local dialect used by the majority of the students and the mainstream regional language and also to train the teachers to use the dialects

In general, it becomes clear that the trend is towards recognizing the importance of using the home language in the early stages of education so as not to alienate and discourage the children of social/cultural minorities It has generally been found that this encourages higher learner achievement

Studies in Nigeria where English is introduced at Grade 4 level, show that there is often fairly intense language interference between the Mother-tongue and English which is thought to contribute to reading, speech and writing disorders

Instructional Time

While it was not possible to accurately compare instructional time available to the primary school teacher across E-9 Countries due to lack of information, it became clear following exchanges and discussions that there was a mis-match between instructional time planned and that which is actually available in the majority of countries The effect of transacting a syllabus planned on the basis of a certain length of school calender within a much shorter one would need to be examined, but it will be safe to assume that this can only have detrimental effects.

Discussions which took place at the meeting pointed to this being a common problem in most countries without being acknowledged as such. It was discussed that in some cases the instructional time available was almost a hundred hours less than officially planned for.

Learning Outcomes

Finally the ultimate objective of education, the learning outcomes were discussed in the light of the search for quality in the presence of many constraints. While the majority of the countries acknowledged that raising the levels of learning achievement is an important goal, much still is required to be done in this area. In China, a problem faced has to do with the structure of tests used to evaluate learning outcomes. The tests are designed to test the acquisition of information rather than reasoning, analytical skills and concept formation which are the desired outcomes of education. Thus the tests are unable to judge whether the desired outcomes are being reached.

Learning achievements according to the baseline studies undertaken for the introduction of the District Primary Education Programme in India have shown that children completing Class V have mastered less than half the expected competencies. The Curriculum Development Centre conducted a study of the students' achievement and the achievements were presented in terms of the percentages of students who had learnt to read and write.

The New Educational Model introduced in Mexico in 1991 stressed the raising of achievement and basic knowledge and abilities, using mathematics for problem solving as important goals. In Nigeria it was found that Fifth and Sixth grade students were unable to read simple stories in Yoruba, the dominant Nigerian language.

Strategies for Action

The meeting considered the various constraints faced by the E-9 Countries in their efforts to meet the goals of UEE, and agreed that it now becomes necessary to take stock and chart out possible future strategies for action.

While it is recognized that learning achievement is an important goal of education, it is not the only aim; therefore the broader connotation of the term education may be accepted as the final goal. Thus education must fulfil all needs of the child, i.e. cognitive, affective and psychomotor. Education must also aim to offer more than information, it must direct itself to concept formation, developing the ability to apply this learning to new situations, analyse, reason and draw conclusions. Education must introduce the use of science and technology for improving the quality of life. Further, education must provide the necessary experience to move towards peace and harmony.

It was agreed that since detailed recommendations in this regard could not be drawn up during the meeting, the responsibility was entrusted to the international consultants and UNESCO officials.

Some Thoughts on Further Action

There are, however, some areas in which sharing of information at the international level would be beneficial Interesting innovations and experiments have been carried out in the areas of management structures, curriculum modification to suit local needs, building linkages in the use of science and technology with the student's daily life and environment and mobilizing the community to support education Most of these have produced positive results and raised learner achievement, though usually on a limited scale

Two examples that immediately spring to mind as interesting experiments in India are the Hoshangabad Science Experiment and Lok Jumbish Similarly, the Brazilian experiment of the community or stake holders electing the Headmaster is interesting, in that it ensures community participation in decision making Further, the candidates for Headmastership have to present a future perspective for the school's development to the electorate and the electorate considers this before casting its vote

The success stories and the sharing of failures within the E-9 Countries would enable each to learn from the other, even use this for possible replication and adaptation It would be of interest to share such and other experiences, specially since in many ways the E-9 Countries share similar problems of resources and trained manpower.

The recently concluded meeting of E-9 Countries on Teacher Training and Syllabus of the First Three Grades proved immensely useful in establishing a greater understanding of commonalities and uniqueness of problems faced by individual countries in achieving UEE There is further need now to learn from experiments and innovations carried out to tackle or overcome these problems and constraints, often under conditions and situations similar to those faced by others in the Group of Nine

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Teacher's Role in Influencing Enrolment and Attendance in Primary Schools

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How can the teacher play his role in influencing enrolment and attendance in primary schools? The question is relevant in the context of a large number of nonstarters and dropouts. The authors have undertaken a research study to develop strategies of enrolment and attendance with a sample of eight schools in Ranga-Reddy district of Andhra Pradesh Intervention programmes and collection of data through questionnaires, interviews and case studies followed by evaluation resulted in substantial improvements.

THE teachers are special in each and every way They mould the children in attending schools. The roles which a teacher plays in the classroom and the teaching styles which he adopts are varied The teacher's behaviour will be determined by the nature of his personality, his experiences and teaching situations in which he finds himself The teacher is in between the world of adult and the world of children The teacher is a "man amongst boys and a boy amongst men". Today the teacher is expected not only to transmit knowledge but also to explore the potential abilities of the students and develop them accordingly, to become deserving citizens of a sovereign, secular and democratic India. Most of the opinions, findings of researches are about the teacher's role towards the development of a pupil who attends the school In a country like India, the teacher's role should extend outside school activities. The following questions arise when the role of a teacher in the society is thought of·

—Has the teacher any role to play for the children who do not attend the school?
—Does the teacher's role stop at a child's achievement?
—What is his attachment to the society?
—Can the teacher influence parents to send their children to school?

—Can the teacher attract the drop-outs back to school?

The answers to the above questions are related to the teacher's influence in the village, and beyond the four walls of the school The teacher's role in influencing the parents and pupils to realise the importance of education and to receive right type of education at the right age has not perhaps been studied, as literature in this regard is scarcely available

Steps taken by the governments to make all children literate in accordance with the Directive Principles of the Constitution, through Universal Free and Compulsory Primary Education, has not yet yielded expected results as good number of pupils are not enrolled so far There are problems hindering the progress in this regard.

The major problems of Universalisation of Primary Education generally identified are

—A large number of school age children are not enrolled (non-starters)

—Those who are enrolled, drop-out in the middle of the school course pre-maturely (drop-outs).

74 83% children drop-out of the school before they reach Class V in primary schools Tens and thousands are under-achievers. They represent tragic waste of resources which our country needs for full productivity.

Several measures have been taken by the government to overcome the problems by providing non-formal education and distance education incentives. A number of projects such as Education For All, Girls Education, etc. are in progress One such project, which is of importance is the Andhra Pradesh Primary Education Project (APPEP).

APPEP is a new intervention introduced in Andhra Pradesh with the objectives of improving the quality in primary education with human resource development and constructing classroom's improved design and quality, and ultimately contribute to achieve the goal of Universalisation of Elementary Education viz. universal enrolment and attendance of children and substantial qualitative improvement at the primary stage The HRD programmes aim at substantial improvement in teacher competencies, and classroom practices. The factors of this component were training to teachers focussing activity-based teaching in the adoption of the six pedagogical principles

—Providing teacher generated learning activities

—Promoting learning by doing, discovering and experimenting

—Developing individual, group and whole classwork

—Providing for individual differences

—Using the local environment

—Creating an interesting classroom by displaying children's work and organising it effectively

Not only on the academic front but also in other aspects the teacher has to play an important role He has a crucial role to play in the improvement of enrolment and attendance in the primary school How can the teacher play his role in influencing enrolment and attendance in primary schools? The question is relevant in the context of large number of non-starters and drop-outs Keeping the above in view, the writers took up a study to get suitable answers

Purpose

- To suggest ways and means to improve attendance and enrolment in primary schools
- To study whether it is possible to reduce drop-out rate through teachers intervention.

Objectives

- To study the impact of teacher's intervention with pupils on attendance and enrolment
- To study the impact of teacher's influence in involving the parents in the matters of school, attendance and enrolment
- To study whether PTA meetings influence the level of enrolment and attendance in primary schools.

Hypotheses

- Besides effective teaching, the teacher's intervention with the pupils has a positive impact on attendance and enrolment.
- The teacher's influence in involving parents in the matters of school has a positive impact on attendance and enrolment.
- Regular PTA meetings influence the level of attendance and enrolment.

Action Plan

- Identification of eight schools of similar characteristics in Ranga Reddy district.
- Conducting experiments from June 1994 to April 1995

The research team decided to select eight out of sixty schools in seven mandals of Ranga Reddy district of Andhra Pradesh, which were experiencing high drop-out rate for the purpose of study The data regarding enrolment, average attendance, month-wise particulars regarding SC/ST, child labour, parent association, drop-out rates class-wise for five years from 1989 to 1994 was obtained. The data was processed through Cohort analysis before the schools were reopened after summer vacation Eight schools were identified among them after taking into consideration the enrolment, drop-outs of SC/ST and child labour, admissions and withdrawals during the month of June and July 1994 The particulars of identified schools are shown in Table 1

The experiment was conducted for one academic year i e from July 1994 to April 1995

General features of the above schools selected were·

1 They were experiencing heavy drop-out, enrolment and attendance problems.
2. All the schools were under APPEP of Ranga Reddy district
3 There was heavy drop-out rate (above 55%) especially in SC/ST and child labour
4 The PTA meetings were irregularly organised and the response was poor
5. Four schools were taken for the experiment from Nawabpet Mandal, two from Shamshabad Mandal and other two from Balanagar Mandal having rural background.

Tools of Experimentation

- Cohort analysis for selection of schools
- Information of enrolment, attendance, admissions and withdrawals every month.

TABLE 1

Particulars of Eight Primary Schools for the Study

Sl. No	*Name of the School and Mandal*	*Enrolment (SC/ST+CL)*	*Dropout Rate*	*% of SC/ST*	*No of Teachers*
1	Kadlcherla Nawabpet Mandal	49 + 63 = 112	above 50%	44%	2
2	Gate Vanampalli Nawabpet Mandal	73 + 83 = 156	– do –	47%	2
3	Meenampalll Kalan Nawabpet Mandal	54 + 79 = 133	– do –	41%	2
4	Ek Mamidi Nawabpet Mandal	93 + 202 = 295	– do –	45%	5
5	Satamrai Shamshabad Mandal	88 + 67 = 155	– do –	57%	2
6	Shamshabad Harljanwada Shamshabad Mandal	59 + 28 = 87	– do –	67%	2
7	Hydernagar Balanagar Mandal	84 + 131 = 215	– do –	39%	2
8	Ferozguda Balanagar Mandal	47 + 71 = 118	– do –	40%	2

SC = Scheduled Caste, ST = Scheduled Tribe, CL = Child Labour

—Interviews with irregular pupils, their parents

—Questionnaire for the causes of not coming to schools from pupils, parents and teachers.

—PTA meetings

—Case studies of irregular students.

Steps Taken to Improve Attendance

—Conducting orientation course for eight school teachers

—Visits to schools, parents and pupils

—Organisation of PTA meetings

—Meetings with parents, pupils and others

—Watching the progress of enrolment and attendance, etc.

—Conducting interviews, case studies

—Collecting questionnaires.

As various educational commissions, National Policy on Education (NPE) 1986, Programme of Action 1986 exhort that community participation in school activities is crucial for the development of primary schools, it was hoped that the teacher's influence involving parents in the matters of schools has a positive impact on attendance and enrolment.

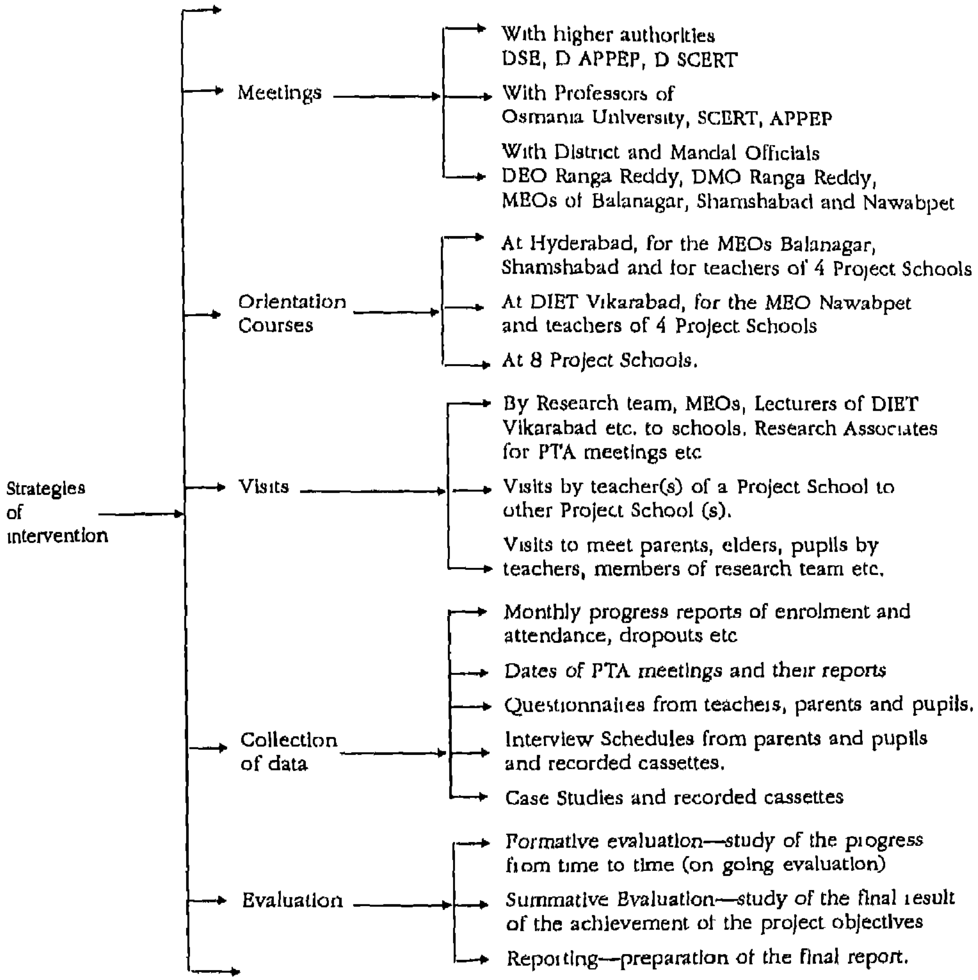
The teachers were oriented to realise this important issue and to make it a point to have regular contacts with parents and discuss with them the problems of schools and to seek their cooperation It was felt that such close rapport would have positive effect on the enrolment and attendance

A conscious effort is made in all eight schools through the following interventions for one academic year to improve enrolment and attendance.

The interventions strategies lead to.

—Regular monitoring of the monthly reports of enrolment, attendance, admis-

Intervention at a Glance


Strategies of intervention
Meetings
With higher authorities DSE, D APPEP, D SCERT
With Professors of Osmania University, SCERT, APPEP
With District and Mandal Officials DEO Ranga Reddy, DMO Ranga Reddy, MEOs of Balanagar, Shamshabad and Nawabpet
Orientation Courses
At Hyderabad, for the MEOs Balanagar, Shamshabad and for teachers of 4 Project Schools
At DIET Vikarabad, for the MEO Nawabpet and teachers of 4 Project Schools
At 8 Project Schools.
Visits
By Research team, MEOs, Lecturers of DIET Vikarabad etc. to schools. Research Associates for PTA meetings etc
Visits by teacher(s) of a Project School to other Project School (s).
Visits to meet parents, elders, pupils by teachers, members of research team etc.
Collection of data
Monthly progress reports of enrolment and attendance, dropouts etc
Dates of PTA meetings and their reports
Questionnaires from teachers, parents and pupils.
Interview Schedules from parents and pupils and recorded cassettes.
Case Studies and recorded cassettes
Evaluation
Formative evaluation—study of the progress from time to time (on going evaluation)
Summative Evaluation—study of the final result of the achievement of the project objectives
Reporting—preparation of the final report.

sions and withdrawals in the schools selected.

—Parent-teacher meetings were regularly conducted.

—Questionnaires were given to the teachers, parent and irregular students to find out the causes relating to enrolment and attendance. The subjects responded promptly.

—Interviews were conducted to indentify and provide remedies to the problems of enrolment and attendance

—Information regarding case studies of irregular students who were brought back to schools were obtained.

The regular monitoring, and essential support from research team to the teacher resulted in substantial improvement of enrolment and attendance was evident from the table given below

(d)	Percentage of increase	9%	+	9%	-	9%

Attendance

(a)	In April 1995	457	+	582	-	1039
(b)	In June 1994	371	+	442	-	813
(c)	Difference	86	+	140	-	226

Sl No	*Enrolment in June 1994*	*Admissions during 1994-95*	*Withdrawals during 1994-95*	*Attendance/ Enrolment in April 95*	*Percentage of increase*
1	Satamrai $\frac{63+61}{87+72}=\frac{124}{159}$	13+18-31	8+18-26	$\frac{17+62}{92+72}=\frac{139}{164}$	$\frac{22\%+2\%}{5\%+0\%}=\frac{12\%}{3\%+0=3\%}$
2	Ferozguda $\frac{33+41}{43+52}=\frac{74}{95}$	7+24-31	1+4-5	$\frac{49+71}{51+72}=\frac{120}{123}$	$\frac{30\%+73\%}{18\%+38\%}=\frac{62\%}{29\%}$
3	Meenapallikalan $\frac{39+49}{48+68}=\frac{88}{116}$	12+16-28	2+3-5	$\frac{59+73}{58+81}=\frac{130}{139}$	$\frac{46\%+50\%}{21\%+19\%}=\frac{48\%}{20\%}$
4	Kadicherla $\frac{25+27}{45+48}=\frac{52}{93}$	10+13-23	2+0-2	$\frac{42+47}{53+61}=\frac{89}{114}$	$\frac{68\%+74\%}{18\%+27\%}=\frac{71\%}{22\%}$
	Total $\frac{170+189}{223+240}=\frac{359}{463}$	42+81-123	13+25-38	$\frac{227+254}{254+286}=\frac{481}{540}$	$\frac{34\%+34\%}{14\%+19\%}=\frac{34\%}{17\%}$
5	Hydernagar $\frac{56+61}{72+121}=\frac{117}{193}$	24+45-69	27+52-79	$\frac{48+82}{69+114}=\frac{130}{183}$	$\frac{-14\%+34\%}{-4\%+-6\%}=\frac{10\%}{-5\%}$
6	Harijanwada Shamshabad $\frac{42+24}{56+31}=\frac{66}{87}$	2+3-5	0+1-1	$\frac{49+28}{58+33}=\frac{77}{91}$	$\frac{17\%+16\%}{4\%+6\%}=\frac{16\%}{5\%}$
7	Gate Vanampalli $\frac{39+47}{65+70}=\frac{86}{135}$	10+12-22	4+3-7	$\frac{58+59}{71+79}=\frac{117}{150}$	$\frac{49\%+26\%}{9\%+13\%}=\frac{36\%}{11\%}$
8	Ekmamidi $\frac{64+121}{82+178}=\frac{185}{260}$	14+34-48	3+1-4	$\frac{75+159}{93+211}=\frac{234}{304}$	$\frac{17\%+31\%}{13\%+19\%}=\frac{26\%}{14\%}$
	Total $\frac{201+253}{275+419}=\frac{454}{694}$	50+93-143	34+57-91	$\frac{230+328}{291+436}=\frac{558}{727}$	$\frac{14\%+29\%}{6\%+4\%}=\frac{22\%}{5\%}$
Grand Total	$\frac{371+442}{498+659}=\frac{813}{1157}$	92 + 174 - 266	47 + 82 - 129	$\frac{457+582}{545+722}=\frac{1039}{1267}$	$\frac{23\%+32\%}{9\%+9\%}=\frac{28\%}{9\%}$

Progress of Enrolment and Attendance (1994-95)

Enrolment

(a)	In April 1995	545	+	722	-	1267
(b)	In June 1994	498	+	659	-	1157
(c)	Difference	47	+	63	=	110
(d)	Percentage	23%	+	32%	-	28%

Number of PTA meetings held during 1994-95—56

Major problems identified for not attending schools as per questionnaire analysis.

— Child labour	57%
— Schools not provided with proper facilities	60%
— Poverty	100%

Problems identified as per interviews

– Poverty	100%
– Child labour	88%
– Looking after the other siblings or house hold work	73%

Percentage of students re-admitted (through case studies)

39 pupils	20%

The overall results show increase of attendance by 28 per cent and enrolment by 9 per cent in the selected schools.

Poverty, lack of proper facilities at school, looking after siblings and household activities are major stumbling blocks for the children to attend the school regularly

SC, ST children (who are socially and culturally backward) drop-out at Class I and II levels. The drop-out rate of other classes was not so alarming.

Conclusions

—Poverty, child labour, household work are some of the prominent reasons for drop-out.

—Teachers were able to involve community in the activities of the school for its development

—Teachers interaction with pupils, parents and elders had positive impact on enrolment in schools.

—Regular PTA meetings had positive effect on improvement of enrolment and attendance in schools.

The State government, Central government and various organisations focus their attention towards the problems of universal elementary education particularly to arrest drop-out rates especially among the SC, ST and child labour. A number of suggestions are being given about the ways and means to achieve education for all. In this broader context the findings of the present project are relevant in the development of strategies of enrolment and attendance.

In-service Training of Primary School Teachers: Some Examples

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Professional development of teachers is now considered as the most significant intervention to improve the quality of school education Baseline achievement studies conducted by the NCERT and NIEPA have pointed out the inadequacy of training of teachers both pre-service and in-service. Prevailing in-service teachers training practices in Shikshak Samakhya Pariyojna, Eklavya, Shiksha Karmi Project, the Lok Jumbish Project, FEEL and Teleconferencing have proved to be the torch bearers and have found to be effective

DECLINING school quality is a matter of serious concern. Among the reasons for the quality erosion are a drop in the quality of teachers' instruction and performance, deteriorating work culture, lack of incentives for effective performance, low teacher morale, etc. Teacher's professional development is now considered as the most significant intervention to improve the quality of school education This is based on the premise that in-service training improves teacher's instructional performance which in turn influences pupils' learning

A considerable investment in terms of human and material resources is being made for providing in-service education and training to teaching work force at primary level in the country, particularly in DPEP states. But very little is known about the quality of training imparted to teachers and the impact of training on teacher's classroom practices and pupils' learning. Baseline achievement studies conducted by the NCERT and NIEPA in 1994 presented a very dismal picture with regard to pupils' achievement in Mathematics and Language (mother-tongue) in primary grades This is a pointer to the inadequacy of training of teachers, both pre-service and in-service Among the inputs which contribute to the quality of training, the most important are the infrastructual facilities, availability of necessary equipment, appropriateness of training content and materials and instructional approaches used in the programme. Output ends of training are determined by inputs and processes of training. It has generally been observed that most of the training programmes suffer from inadequacy as well as inappropriateness of these inputs. Besides, the training process is abysmally inappropriate as training programmes are dominated by lectures by trainers Trainees are more or less passive listeners. Research indicates the trainees are keen to participate actively in the training process To improve the quality of in-service training, transactional approaches, therefore, need to be effective What are the practices which have been found to be effective in providing quality training to primary teachers? Some of these practices alongwith their salient features are discussed briefly in the following paragraphs:

- ☐ Shikshak Samakhya Pariyojna
- ☐ Ek Lavya's content specific, activity-based training of primary teachers
- ☐ Shiksha Karmi Project
- ☐ The Lok Jumbish Project
- ☐ The FEEL teacher programme
- ☐ Teleconferencing

Shikshak Samakhya Pariyojna

The Pariyojna was launched in Badnavar block of Dhar district of Madhya Pradesh in September 1992 Now in operation in a number of districts in the State, its main objective is to provide training to primary teachers to create conditions in the classroom for joyful learning with a view to achieving the goal of Universalization of Primary Education (UPE) by 2000 AD The Pariyojna is run jointly by the UNICEF and the SCERT, Madhya Pradesh.

Salient Features

Salient features of the training aspect of the Pariyojna are mentioned below in brief

- ☐ The training of teachers is organised at the block level Its duration is one day only. The number of trainees in a programme varies from 100 to 300
- ☐ Senior primary school teachers act as trainers
- ☐ The morning session of the programme starts with songs, dramatization and other role playing activities by trainers themselves. Trainers demonstrate the use of cards, pictures, cut-outs for teaching number and alphabets to pupils In the latter half day of the programme, participants themselves make pocket boards, cards, pictures of different objects, etc. Trainees learn the technique of painting black lower side of the wall of the classroom. The blackened portion serves as a blackboard for pupils.
- ☐ Trainees also learn to decorate the classroom
- ☐ Trainees document folk songs, rhymes, and prepare charts and models useful to make their teaching effective
- ☐ The training methodology promotes team work, cooperation in learning as trainees learn from their senior colleagues and trainers from the trainees.
- ☐ Training programmes are entirely activity-based.
- ☐ Rs. 200 to 500 is provided to teachers per class per year to make their classrooms look more attractive.

Appraisal of the Pariyojna

Studies have not been conducted to determine the impact of training on pupils' learning. However, a quick appraisal of the functioning of the Pariyojna by the Regional Institute of Education, Bhopal in 1993 and the study by Preeti Sharma in 1995 revealed that the Pariyojna helped in environment building and increasing enrolment of children in schools.

Ek Lavya's content specific and activity-based training of primary teachers

Ek Lavya, a non-governmental organization, started training of primary teachers from 1986. The main objectives of training are to:

☐ Fine-tune the skill of learning by doing approach

☐ Enrich teacher's knowledge in different subjects

☐ Develop teacher's capability in undertaking action research

Training Methodology

Salient feature of the training methodology are mentioned below

☐ The training of primary teachers is through 3-tier Cascade model Training is first imparted to key persons who in turn provide training to resource persons These resource persons provide training to primary teachers

☐ The training of key persons and the resource persons is as rigorous as that of primary teachers The training of key persons and resource persons is of 10 days and that of primary teachers 15 days

☐ A group of trainees normally consists of 25 to 40 persons

☐ In order to minimise the transmission loss, the gap between training of key persons and the resource persons is almost zero.

☐ The training is activity-based. This is achieved by-

(a) using local resources, waste materials—stem branches, and leaves of plants, cardboard, paper pieces, broken bangles, cups, plates, stones, nails, sand, chalk pieces, etc as teaching aids.

(b) asking teachers to read aloud the training materials one by one and also encouraging them to explore activities which they can perform in the classroom.

(c) providing training in simulated conditions A classroom situation is created in the programme One participant acts as a teacher and the others act as primary school pupils. The participant who acts as a teacher solves the problem(s) posed by pupils

(d) encouraging individual's reflective thinking

Shiksha Karmi Project

The Shiksha Karmi Project was launched in Rajasthan in 1987 with the assistance of Swedish International Development Authority (SIDA) to revitalise and expand primary education in remote and backward villages of Rajasthan Its main objectives are to overcome two significant problems of primary education—(a) teacher absenteeism in schools located in remote and difficult areas and (b) poor enrolment and high dropout of children particularly among girls. The concept of Shiksha Karmi is based on the premise that a change agent specially in the field of education can work effectively if he/she belongs to the same locality. This approach is important particularly for villages in remote areas, hilly tracts, etc. where it is very difficult for an outsider to stay and to be accepted In such a situation, the qualifications of an individual are of lesser importance than his/her willingness and ability to function as a social worker. The selection of a Shiksha Karmi is made by the village community and the minimum qualifications prescribed for a school teacher are not insisted upon. The Shiksha Karmis run the centres for three hours a day.

Salient Features

Salient features of the training aspect of the project are:

- ☐ Shiksha Karmis are provided training and academic support on a continuing basis. After selection, they are provided induction training. However, his/her engagement as a Shiksha Karmi is dependent upon his/her passing the training course successfully. The training is residential in character and its objectives are to:
- ☐ increase the power of expression
- ☐ enrich their knowledge of different subjects
- ☐ improve pronunciation and spellings
- ☐ develop skills of using local materials as learning aids
- ☐ practise strategies to bring children to the school and to retain them; and
- ☐ develop competence to use story telling, poetry, songs, games and other activities for promoting pupils' learning.

Teacher absenteeism in Shiksha Karmi schools has become a thing of the past. The enrolment of students has increased significantly in the schools in comparison to other schools and many villages have attained the target of cent percent enrolment. Shiksha Karmi primary school, Ralawatan in Panchayat Samiti, Bandikni (Dausa) is one of them. It has been observed that sympathetic and positive support coupled with rigorous monitoring by the supervisory personnel in a compact area is a crucial element for the success of the Shiksha Karmi Model It further suggests that enrolment of children can be improved by better management, quality teaching in schools, establishing schools of convenient timings, community involvement and participation of parents.

The Lok Jumbish Project

Lok Jumbish Project is people's movement for providing primary education of a satisfactory quality to all children in Rajasthan. The project is also financed by the SIDA, the Government of India and the Government of Rajasthan. The major goal of the project is to achieve UPE within the shortest possible time through people's movement. The project envisages training of teachers as an important tool for improving teacher's instructional performance in classroom and seeking pupil's participation. The major objectives of training of teachers are to (a) fine-tune teacher's competencies (b) enhance their motivation and (c) establish linkages with curriculum and textbooks.

Salient Features

Salient features of the training methodology are

- ☐ The training of teachers is through Cascade model (a 3-tier model)
- ☐ Trainers are closely associated with the development of training modules for teachers
- ☐ Non print materials—video films are used effectively in providing training to both the trainers and primary teachers
- ☐ Training of trainers and trainees (primary teachers) is not 'one shot' affair It is of recurrent nature For example, primary teachers are provided training every year for 10 to 12 days Besides monthly meetings are organised for them. Trainers, key resource persons and resource persons, also get training every year They rather undergo mid-year re-orientation also
- ☐ Training of teachers is voluntary in character The teachers are, therefore, not compelled to attend any training programme No action is taken against any one for his/her non-attendance.
- ☐ Transactional modality is participative and activity-based

The FEEL Teacher Programme

Aiminsights Academy for Intense Motivation for Identifying Natural Skills, Independent Growth, Human Thoughts and Strategies is an organisation at Mangalore which works for the betterment of teaching community. It organises a number of programmes for the purpose Of these programmes, the Facilitating Excellence in Effective Leadership (FEEL) is organised for new teachers It is a human resource development programme with special emphasis on human relations skills. Specific objectives of the FEEL programme are to

—Help teachers to improve their skills of inter-personal communication

—Help them to perceive the need for developing self-esteem of pupils

—Help them to acquire the skill of developing self-esteem in pupils

—Influence teacher's attitude towards corporate punishment meted out to pupils and to accept it as not needed

—Help teachers to understand why anger and violence associated with it should be avoided in a teacher student relationship

—Show models of classroom interaction and management towards developing mind skills in children and

—Develop human relations skill in teachers Aiminsights is a self-financed institution and it does not receive grants. It has, however, received financial support from the Government of Karnataka.

Salient Features of Training

—Training is organised on week ends so that the school does not suffer much

—Training is meant for new teachers·

—Development of human relations skill in teachers in the context of classroom is emphasised.

—A great deal of emphasis is laid on developing self-esteem and communication skills among teachers.

—Training programmes are structured on an experimental learning—a methodology based on the faith that human experience can be the best base for any learning. Trainees are given exercises which they are required to do/perform. Non-correctional methods of instruction are used to all the stages in order to avert crushing participants' self-esteem.

- —Mind skills are developed among trainees. They undergo experiences of developing the skills among pupils during the training programme.
- —The training programme has six lead themes—effective leadership, human relations, freedom and punishment, communication, self-esteem and mind skills.
- —Each FEEL programme is of 80 hours duration. Each batch consists of about 20 trainees.
- —Transactional approaches followed in the training programmes are—group discussion, handing out the presentation sheets, games, activities like building tower with three wooden blocks, creating design with given wooden pieces, activities, etc.
- —There is an effective monitoring of each programme.

Teleconferencing

The model was used by the NCERT for providing training to teachers under 'Programme of Mass Orientation of School Teachers' (PMOST) and is also being used for SOPT. In this special orientation of primary teachers (SOPT) model, there is a transmission loss at different level with the result that the quality of training of teachers suffers. Teleconferencing is an alternate strategy to the Cascade approach in training teachers. It has been used effectively in some developed countries like the USA and Israel to impart training to teachers at a distance through the telecommunication technologies. The teleconferencing approach to education was one way video and two way audio. Alternative strategies for distance education using various combination of some of the telecommunication technologies have largely been found to be effective.

The NCERT Experiment

In 1996, the NCERT used the teleconferencing model to provide in-service training to primary teachers for one week under the SOPT programme. The training methodology involved using one way video and two way audio interaction for imparting training to primary teachers of single language group by creating a statewide classroom. The programme covered 850 teachers at 20 district centres in Karnataka. Teachers undergoing training used Straight Trunk Dialing (STD) on telephone to put questions to expert penalists. Their responses were transmitted live from the studio of the Indira Gandhi National Open University (IGNOU) which had an uplink with a transponder on an INSAT Satellite and was operated by the Indian Space Research Organization. The evaluation of the programme revealed that the conceptual understanding of the participating teachers improved significantly.

Implications

Given below are some features of effective training practices. In-service training agencies need to incorporate these features in their training practices. This is likely to improve the quality of training being imparted to teachers.

- —Association of trainers with the production of training materials

—Training of trainers as rigorous as that of the trainees

—Recurrent training instead of 'One Shot' training

—Use of both the print and non-print mode

—Use of senior primary teachers as trainers

—Participative and activity-based training

—Training of teachers in decorating the classroom

—Use of local material for preparing aids for facilitating learning

—Creating opportunities for reflective thinking

—Emphasis on developing human relations, self-image and mind skills among teachers

—Training teachers in using folk songs, rhymes, stories, poetry, games and other activities for facilitating learning

—Building capacity of teachers in undertaking action research

—In a Cascade model of training, gap between key resource persons' training and resource persons; resource persons training and training of primary teachers need to be reduced to zero

—Structuring training programmes on experiential learning

—Rigorous monitoring of quality of training of teachers

—Use of teleconferencing mode in training teachers.

Project Methods in Social Studies

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The purpose of writing this paper is to provide a model in teaching social studies. The model may be used to fit any nation, area or region being studied by pupils in the social studies. Project methods represent an activity-centred curriculum. The student is an active participant, rather than a passive recipient of facts and information.

Active participation in the social studies emphasizes strong learner involvement in choosing goals, activities and experiences, as well as appraisal procedures The social studies teacher becomes a guide, stimulator and resource person, not a dispenser of subject matter. Project methods of instruction place stress upon the student being a responsible in establishing goals, planning to attain goals, implementing the plans as well as evaluating the quality of the project.

The Project, Student and Teacher

A stimulating learning environment is needed to encourage students to select a project on an individual basis or as a committee endeavour. Quality bulletin board displays objects on an interest centre and carefully chosen audio-visual aids as learning activities can become motivators for learners to pursue and develop a project. Students receive ideas for project development when pursuing ongoing lessons and units of study. After viewing and discussing materials in the classroom setting, questions are raised by learners. Each question becomes purposeful due to students having an inward desire to learn. To pursue the purpose, students need to plan sequentially what to do to attain the purpose or solve the identified problem. Well developed plans are needed. What is planned needs to be carried out to completion. Effort and ingenuity are necessary in working toward task completion. Carrying out the plans then would come in sequence, after the planning component A creative being perseveres and does not give up along the way when pursuing a task to completion. A final step is to evaluate the completed project. There are selected criteria to use when evaluating the project Among others, the following criteria appear salient

1. Was neatness and accuracy involved in the completed project?
2. Did each committee member actively pursue responsibilities on the committee?
3. Were committee members able to work harmoniously with each other?
4. How would committee members operate if the project would be done differently?
5. Did each member of the committee achieve as optimally as possible? Specific projects will now be discussed in stressing a unit of study, such as the Middle East

1. Students with teacher guidance could make a model of the Mosque of Abraham in the city of Hebron A cardboard box measuring 12 inches wide by 18 inches long with a height of ten inches may be used The Mosque originally was built as a fortress in the days of the Roman Empire, approximately 2000 years ago A minaret can be designed and cutout from the scrap cardboard (From the minaret, devout Muslims are called to prayer five times a day). The minaret is then attached to the box representing the Mosque. Reputable encyclopedias contain pictures of the Mosque of Abraham Inside the Mosque are tombs of the patriarchs Abraham and his wife Sarah Isaac and his wife Rebecca as well as Jacob and his wife Leah A Mosque is a place of worship for devout Muslims Muslims face toward Mecca in Saudi Arabia, the birthplace of the Prophet Mohammed, when praying

2 Learners might plan with the teacher how to portray the Church of the Nativity, located in Bethlehem. Thus, a mural might be planned and completed, using a variety of art media. This church has its importance as the place where Christ was born, according to devout believers in the Christian religion Bethlehem is located 13 miles north of Hebron. The mural can be exhibited along with the Mosque of Abraham, among other class projects, developed by students Students from other classrooms, as well as parents, should be invited to observe that which the students have completed Selected audio-visual aids provide visuals and history of the Church of the Nativity

3. Students with teacher guidance may plan a model of the wall around east Jerusalem A cardboard box may be used to portray the wall. With proper safety rules, the box may be cut so that the top shows the contour of the walled city Students can use a watercolour brush with brown tempera paint to show the natural rock in the wall The wall around east Jerusalem is two and one-half miles in length It was built in 1542 when the Ottoman Empire ruled the land of Palestine Openings in the wall may be cutout to show well known gates such as the Damascus gate, Herod's gate, and the Jaffa gate. Much research can be completed by students to learn about the long history of east Jerusalem, as well as many other well known sites in the land of Palestine. Studying the history of these gates, especially the Golden Gate, can fascinate many students

4. Students may make a relief map of

Palestine using an equal mixture of flour and salt, adding enough water to make a thick paste. The mixture should be placed on a piece of plywood, 18 inches by 24 inches On the relief map, students may shape the Dead Sea, located approximately 1300 feet below sea level The Dead Sea has no outlet, thus making for 25 per cent salt and mineral content in its waters The Sea of Galilee, located 67 miles north, provides water for the Dead Sea. It has fresh water The Jordan River connects the Sea of Galilee in the north with the Dead Sea in the south The Jordan River winds like a ribbon and is approximately 200 miles in length with its curves and turns. The Sea of Galilee is about 600 feet below sea level Thus the muddy water from the Jordan River flows rapidly from the Sea of Galilee to the Dead Sea in its rapid descent These geographical facts make for a fascination of their very own when students make a relief map of the land of Palestine These, among other geographical features of Palestine, can be placed by students on the relief map.

Place geography activities are also vital for learners to participate in On the above named relief map, students may put in the location of Jerusalem East Jerusalem has a fascination of its very own It is a walled city with walls two and one-half miles in distance to surround it. Approximately, five miles south is the city of Bethlehem. The Church of the Nativity is located on a hill in Bethlehem. Inside is the grotto area where, according to devout Christians, Christ was born Outside of Bethlehem, the Shepherd's Fields are located. These fields are owned by the YMCA and symbolize the place where angels announced the birth of Christ to shepherds, according to devout believers in Christianity Other familiar cities to place on the relief map include Hebron, Jerusalem, Samaria, Jericho, Bethany, Haifa and Tel Aviv The history attached to each city and village is very important to the land where three religions were born

5. Students with teacher guidance may make dioramas. A three dimensional model is then made of selected sites The western wall, also called the wailing wall, is located inside the walls of east Jerusalem. The western wall is the only remnant of the ancient Jewish temple, according to devout believers in Judaism This wall dates back to the days of Herod the Great, approximately 2000 years ago The western wall is used for worship services by devout believers in Judaism. By studying models of and reading about the wall, students can make a diorama.

A second diorama to make would emphasize the Dome of the Rock, a Muslim Mosque (built 691 A D.) located directly east of the western wall Approximately, 100 yards south is the Mosque El Aksa (built 706 A D.). Between these two mosques, according to devout Muslims, the prophet Mohammed ascended into heaven and returned back to earth again The Dome of the Rock and the Mosque El Aksa are located inside the walls of east Jerusalem Right on the east side of the wall of Jerusalem is the Golden Gate. This is the only gate that is closed on the entire wall surrounding east Jerusalem The Golden Gate will remain closed until the Messiah returns to earth again, according to devout Muslims, Christians and Jews. By and through studying models of all these scenes from diverse reference sources, students can receive information on constructing replicas for the dioramas.

A third diorama to make could be the Mount of Olives, located approximately two miles east of the Golden Gate. According to devout Christians, Christ ascended into heaven from the Mount of Olives A mosque, the Ascension, is located on the Mount of Olives. A model of this mosque can be made by students with teacher guidance There are 105 religious structures on the Mount of Olives such as the Russian Orthodox Church, the Russian Church of Mary Magdalene, The Church of All Nations with the Garden of Gethsemanee, and the Augusta Victoria Hospital. As a project, a committee of students may desire to research a few of these structures and develop a written report on the results. The committee might wish to present their findings to the entire class. With quality reference sources and illustrations, students may develop a report to the class which is interesting and stimulating.

In Closing

A project means of instruction can provide a very rich curriculum to students. Thus in a unit on the Middle East area of the world, students may show the following in project form, the Mosque of Abraham, the Church of the Nativity in Bethlehem, the wall around east Jerusalem, a map of the Holy Land, the Dead Sea, Sea of Galilee, the Jordan River, the Shepherd's Fields, the Western Wall, the Dome of the Rock, the Golden Gate and the Mount of Olives.

Project methods used to show the above named content included the following.

1. making models
2. developing murals.
3. constructing a relief map
4. doing dioramas.
5. emphasizing pencil sketching
6. planning puppets and marionettes
7. stressing papier'mache work.
8. participating in research endeavours.

Each student needs to achieve as optimally as possible in knowledge, skills and attitudes objectives when participating in the project method As projects are constructed and developed, much reading and writing are involved. Arithmetic is used to measure projects planned and implemented. Principles of science are brought in when learning about the Sea of Galilee, the Jordan River, and the Dead Sea Art work is emphasized within the framework of making models, murals, and dioramas. Truly an integrated interdisciplinary curriculum is then in evidence.

Girls and Technology Studies: Exploring a Curriculum Innovation of Future Advantage

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In the social context there has been practically negligible input for girls as far as technology is concerned. To prepare girls for participating into technology of twenty first century, it becomes imperative that schools should explore technology studies as a new discipline and as the curriculum innovation of future advantage. Technology studies would help build the self esteem of girls, train them to have their full control on life and explore many more myths about them for a healthier society.

THE fact that the Third World countries are lagging behind from the developed nations due to lack in the know-how of advanced technology is well known. It is the technology which brings about tremendous change in the economy of a country. To prepare India for 21st century and to bring it at par with the developed countries, a due emphasis is being given to technology by the Government of India

The world of technology is the world of men. There has been practically negligible input for technology for girls as far as the social context is concerned Many girls do not consider a career for themselves in technical fields. They feel less confident of their abilities to work in those fields. Most of the time, girls are ignorant about the nature of work involved in the technical fields Schools therefore should explore it on a pilot basis and know more about this area of technology studies as a part of the curriculum and make an effort to let it emerge as a new discipline or subject. Technology studies could well be an innovation of school curriculum for the 21st century It would be a step towards social reality, a via media for injecting scientific awareness among masses and the safe road towards technological advancement for a greater economic recovery in the country.

Technology studies may appear as a buzz word as far as the school curriculum is concerned. This would be a new area in school education particularly in the context of girls. Technology studies as a new discipline in school curriculum will have an impact on the minds of girls. It will certainly enhance their career options It may also cultivate in them a taste for technology-based issues and build extra skills to handle problems Spatial abilities and capabilities will get advanced. High technology-based knowledge skills will promote girls and women as equal partners with boys and men in the world of technology of next century The studies would help girls to have their own control on their future, improve their status in society, explore many more myths about girls which are prevalent in the conservative, traditional society and develop in them a high positive self esteem

What kind of curriculum input should go into technology studies is a matter of adopting well balanced approach and strategy which must cater to the needs of girls .Technology studies must focus towards attitudinal change of the society and its people It should bring in novel ways of approaching the problem and should have various alternatives for solving the problems A right kind of infrastructure could be developed for training of teachers to teach technology-studies Trade teachers and teachers from the industry could be invited on a contract basis and be employed for the new subject even part-time Also the Socially Useful Productive Work (SUPW) or the crafts' teacher could join hands for furthering the course

Team-teaching, cooperative learning and working in groups could become the encouraged practices for making girls comfortable with the subject Value of time by assigning tasks within time frame could be imbibed Work-experience programmes, video, films, interviews, extra-mural lectures, excursions, visit for museums and field visits could be the built-in techniques Games, inviting women and men as role models, experimentation, mantaling and dismantling of toys and equipments and preparing models might be included as a part of the classroom activity. The awareness towards the power of language, expression, presentation and hands-on experience could be generated Problems could be tackled coming from within the group and from local need based situations

The content for technology studies could include kite-making, gardening, weaving, textile designing, interior designing, setting up a radio-station, working on TV centre, supplying electricity, making cages and traps for animals, preparing models of rockets and aeroplanes, ecosystems, fish aquarium, creating artificial snow, erupting of volcano, setting up a small industry and so on Small scientific projects like making a biogas plant, smokeless *chulahas*, solar cooler, and other projects related to Indian conditions and system could go into the studies of technology. The standards and the age of the girl-pupil could be taken care of. In the Indian context, infrastructure for technology studies in schools can be built by providing low-cost technical materials like mechano, braino, blocks and lego-kits, etc

Lego technique could be one of the methods to explore the technical minds of girls. Lego technique kits like other science kits can be made available to schools The teachers need to identify this behaviour and create an environment for girls to build confidence on lego Use of computer and computer-graphics is another very important method to build technical skills among girls. The purpose of all the projects along with lego technique and computer graphics is to develop high order thinking and spatial skills among girls. The girls then get an opportunity to enter into the fields of robotics, space-science, astrophysics and so on. The response of children by exposing them to technical fields in a self learning, creative style with peers can be expected to be much higher, yielding good results.

Such an experiment had started in many schools of Victoria, New South Wales and Queensland in Australia. The feedback is positive. A number of such projects are under operation in the U.K. and the U.S A. Technology studies may not differ from the situation already there. The only difference will be the processes as related to the social context.

In the light of the above presentation at the UNESCO-sponsored workshop on 'UPE for Girls' held at NCERT from 21-26 August 1989, the House agreed in principle to the needs of girls for technology studies. The House recommended the inclusion of technology studies into the present school curriculum The House was of the opinion that this should come under the 'Operation Blackboard' scheme already being implemented by Government of India for the achievement of the Universalization of Elementary Education by the turn of 21st century

Development of Creativity and Achievement

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The Indian teacher educator has been experimenting with many indigenous models. The author in the present study tries to explore the possibility of developing creativity and cognitive thinking in terms of academic achievements in a rural classroom through thinking games as advocated by "Genevan approach and objective-based teaching models". This in turn is a conversion of "Bloomian objective-based evaluation model" into an objective based model called Advanced Curriculum Model of Cognitive Learning (ACMCL). This paper is an empirical comparative evidence of the efficacy of these two approaches in a rural primary school.

IT is a common belief that a tight factual syllabus delivered by teachers are not the ideal conditions for producing divergent thinking. Some American psychologists, notably Torrance (1962-63) and his associates through their various publications drew the conclusion that parents and teachers actively curb creative behaviour in the young because it is too troublesome to develop it and at the same time it is very time consuming The inquiring child needs plenty of attention; his questions are frequently difficult to answer in simple language, sometimes embarrassing, while his unskilled hands lead to messiness and disorder

In schools the teachers have a tendency to make unnecessary rigid instructions in the process of defining the appropriate learning in the name of modern methods of teaching As teachers, their main interest should be focussed on patterns of learning and the ways of teaching, facilitating child's thinking in the right direction. Keeping this objective in mind, an attempt was made to study the efficacy of two such open ended approaches in the development of concepts of science in the children of the rural areas It has been observed that these young children easily loose their interests in schools as the teaching methods lack proper motivation The aim of teacher offen seems to complete the syllabus by the easiest and quickest approach and the parents are illiterate to do the needful for their wards

The two methods of teaching are under consideration· "Objective-based teaching and teaching through thinking games" as theorized by Piaget and explained and experimented upon by Furth (1970 and 1975) The objective-based teaching is based on ACMCL which has its inception in Bloom's taxonomy and its significance is that it emphasized on the development of those cognitive abilities such as reasoning, interpretation, verification, etc In ACMCL, learning experiences (processes) are integrated with learning outcomes (products). In other words, learning processes are linked with the objectives expected to be attained This is a model which can easily be used in the actual classroom for developing creativity and intellect The significance of the ACMCL has been emphasized to develop the mental processes through content and multiway interactions among teachers, students and teaching learning material The strengthening of the thinking process is essential as it forms the basis of learning of any concept. Furth (1970) had developed a few thinking games which can help the child to develop stable concepts of space, time, relations, classes and combinations.

According to Piaget, the child is not passive, he is active, curious, dynamic and explorative. Keeping this in mind a great variety of sensational and perceptual experiences can be arranged in some sort of order which facilitates the intellectual development and presented in the form of simple games. Through playing, teaching becomes an interesting activity and a child derives immense pleasure from it 'The Child Study Unit' of the NCERT has prepared various types of educational toys and thinking games with a view to evolve better teaching-learning process

The present study aims to find out a suitable method of teaching science to the students of the rural areas

Purpose of the Study

1. To study the relative effectiveness of objective-based teaching (OBT), teaching through thinking games (TTG) and traditional method of teaching (TMT) for the rural students of primary level to develop creativity and achievement in Science.
2. To study the relationship of creativity components and intelligence at primary level of rural students
3. To study the relationship of creativity and achievement at primary level of rural students
4. To study the relationship of socio-economic status (SES) to creativity, intelligence and achievements at primary level of rural children

Hypotheses

1. There is no relationship of achievement and methods of teaching, i e OBT, TTG and TMT.
2 There is no relationship of creativity components, i e., verbal fluency (VF), verbal flexibility (VX), verbal originality (VO), verbal total (VT), figural elaboration (FE), figural originality (FO) and figural total (FT) to methods of teaching, i e. OBT, TTG and

TMT science to rural students at primary level

3 There is no relationship of intelligence and methods of teaching science to rural students at primary level

4. There is no inter relationship of SES, intelligence, achievement, creativity components and methods of teaching science to rural students at primary level

Design and Sample

The present study was a result of a pre-post experimental design which consisted of three types of variables·

1 Independent variables or treatment variables—three methods of teaching, i e.
(a) OBT
(b) TTG
(c) TMT
2 Dependent variables, i e.
(a) Achievement in science
(b) Creativity components
3 Concomitant variables
(a) Intelligence
(b) Socio-economic-status (SES)

SAMPLE· Sixty-six students of Class IV of Antah village, Kota District, Rajasthan.

TOOLS 1 Self-made achievement test in science 2 Coloured progressive matrices 3. Culture fair test of intelligence 4. Creativity test· two tests were used, Non-verbal creativity test of Wallach Kogan. 5 Socio-economic-status.

Methods of Teaching

1. OBT· Specific objectives were laid and the lessons were accordingly taught This was in accordance to the ACMCL. The objectives were as follows:
(i) Knowledge recognition, recall
(ii) Understanding seeing relationship, citing, discrimination, classification, interpretation, verification and generalization
(iii) Application reasoning, formulating hypothesis, establishing hypothesis, inference and prediction

Since OBT is behavioristic in outlook based on specific categorization, a teacher can manipulate the specific mental process easily by providing suitable learning experiences

2. TTG· Emphasis was to create thinking environment where children play and learn Furth (1970) designed various games and play sequences to develop child's thinking ability In the present study the following thinking games were compiled and supplemented along with the content of the science textbook
(i) Probability games
(ii) Recognition by touch
(iii) Visual spatial games
(iv) Communication games
(v) Games for sorting and classifying
(vi) Visual thinking games
(vii) Games prepared by the Child Study Unit of NCERT.

3 TMT· The teaching through the conventional method by the concern/ed teachers of science to the students of Class IV, strictly according to the textbook method, where the child is just a passive recipient of knowledge

Statistical Analysis of Data

Various statistical techniques have been used to analyze the data of the pre and post-test of the three groups under study, i.e , Experimental group I (OBT N=22), Experimental group II (TTG N=22) and Control group III (CG N=22)

Both parametric and non-parametric techniques were used to study the significance of differences among the three groups as well as to see the efficacy of these methods of teaching

Statistical Techniques

1. t-values
2. Analysis of variance
3. Analysis of co-variance
4. Kruskal Wallis test (Anova by ranks).
5. Contingency correlation

Results and Findings

Table I shows indices of measures of central tendencies and dispersion of gain scores of all variables and significant differences among and between groups

An overview of the results have shown that there are significant differences between the mean gain scores of achievement test of the experimental groups (OBT) in comparison to the control group (TMT) Students taught with the help of lesson plans prepared on the guidelines of OBT showed greater acquisition of concepts in science than those taught by the textbook method.

A comparison of the mean gain scores of the experimental group I (OBT) with the experimental group II (TTG) was not very significant, though the mean trend had shown the superiority of the former group (M=8, S.D =12 3) to the later group (M=3.37, S D =8.10) Similarly experimental group II did not differ significantly from the control group but the indices of mean and S.D. indicated the trend of effectiveness of the experimental group II (M=3 37, S.D =3.10) over the control group (M=.23, S.D =8 37)

Since this is an experimental design, pre-post experimental design was used In order to measure the effect of teaching methods (treatment variable) the impact of some concomitant variables were supposed to be controlled Those variables which had direct bearing on the achievement of the students were considered It may be noted

TABLE 1

Measures of Central Tendencies, Standard Deviation and Skewness of Gain Scores of 3 Groups

	Experimental Group I OBT N=22	*Experimental Group II (TTG) N=22*	*Control Group TMT N=22*	*Total Sample N=66*
Mean	8.00	3.37	23	3.71
Median	8.8	3.5	–.50	3.30
Mode	10.1	3.8	–1.96	–6.73
S.D	12.3	8.05	8.31	–8.7
Skewness	–.05	–.048	26	1.24

Groups	– value	Level of Significance
1 and 2 Group	= 1.18	10
1 and 3 Group	= 2.45	.01
2 and 3 Group	= 1.27	10

TABLE 2

Summary of ANOVA by Ranks (Kruskal Wallis X^2 cft)

Sources of Variation/ Variables	*OBT (M=32) of Ranks*	*TGT (M=22) of Ranks*	*TMT (M=22) of Ranks*	*X^2 cft H Values*
Achievement Gain Scores	886.5	760.5	554	5.47*

* Significant at .01 level

TABLE 3

Summary of ANOVA by Ranks (Kruskal Wallis X^2 cft)

Sources of Variation/ Variables	*OBT (M=32) of Ranks*	*TTG (M=22) of Ranks*	*TMT (M=22) of Ranks*	*X^2 cft H Values*
Achievement Gain Score	886.5	760.5	564	5.47*

* Significant at .01 level

that groups were equated on the basis of general mental ability (GMA) Hence the effect of GMA was neutralized. Creativity and socio-economic status are generally considered the most important factors contributing to the achievement Therefore, scores were obtained on creativity measures and SES before the treatment and after the treatment In table 1 measures of central tendency and measures of desperation of all the variables in the pre-test and post-test are presented

The scrutiny of the table reveals that the distribution of some measures is not normal. Therefore further analysis was done on the basis of non-parametric techniques Kruskal Wallis test as a parallel technique of ANOVA was found the most suitable Table 2 shows the results and the significant differences among the three groups.

The results of Kruskal Wallis Test are significant therefore leading to the conclusion that significant differences existed among the three groups The results of the Kruskal Wallis was confirmed by the use of analysis of variance also, which is given in Table 3.

The results of both F-values are significant thus indicating that significant differences existed in the two experimental groups one taught by OBT and the other by TTG and third controlled group

To ascertain the intergroup differences various t-tests were calculated The results of t-tests are given in Table 4

From the scrutiny of the Table 4 it is obvious that OBT was more effective than the TMT Teaching through thinking games was also better than the TMT. Further OBT was also found superior to the TTG though the t-values were not very significant. These results led to the conclusion that OBT was the most effective method.

Analysis of variance does not adjust the contribution of other concomitant variables This study involved pre-post experimental

TABLE 4

Showing 't' Values of Treatment Groups on Gain Scores (Post—Pre Achievement)

Groups	*t-values*	*Significant level*	*Value*
OBT-TTH	1.48	-	
OBT-TMT	2 45	01	
TTG-TMT	1 27	-	

design, therefore the significant differences among the three groups were ascertained though the ANCOVA

The effect of sampling fluctuation could not be accounted for the results of various t-tests In this study, two observations were taken into account and it is obvious that there existed a relationship between the two observations In order to avoid the lengthy procedure of the various relationship the ANCOVA was found to be most suitable In the following table the results are displayed.

The secondary purpose of the study was to see the relationship among various variables. From the table of the central tendency and dispersions, it was found that the measures of achievement test, SES, figural elaboration, figural originality, figural creativity, verbal flexibility, verbal fluency, verbal originality, verbal total are skewed. Therefore, the relationship among the various measures were computed by the coefficient of contingency for all the three groups separately, which are summarized in the matrix

From the matrix it is clear that achievement is significantly related to intelligence, SES, verbal creativity and non-verbal creativity in the both experimental groups But the same relationship was found missing in the controlled group. Intelligence is related to verbal creativity in all three groups but non-verbal creativity is not related to intelligence in the controlled group

SES is not related to intelligence in the controlled group and in one of the experimental groups (OBT)

SES and intelligence are significantly related to the verbal creativity in all the groups

Both verbal and non-verbal creative measures are significantly inter-related in all the three groups.

Intelligence, verbal and non-verbal creativity components are related to the achievement

TABLE 5

Analysis of Co-variance Results of Pre(X) and Post(Y) Scores

	df	*SSX*	*SSY*	*MSX(YX)*	*MSY(VX)*	*FX*	*FY*
Between Group	2	155.75	500 81	78.25	250 41	123	5.6
Within Group	63	4001.35	2824 05	634 94	44 83		
Total	65	4158.10	3824.85				

Significant at .01 level

TABLE 6

Matrix Showing Contingency Correlation

Variablity	*Achievement*	*Intelligence*	*SES*	*Figural Creativity*	*Verbal Creativity*
Achievement	–	.65*	57*	68*	.72*
	–	51*	62*	.64*	.63*
	–	.22	41	40	.31
Intelligence	–	–	39	.93*	.57*
	–	–	47**	68*	55*
	–	–	.22	43	56*
SES	–	–	–	.51**	.37
	–	–	–	.64*	52**
	–	–	–	45**	30
Figural Creativity	–	–	–	–	.52**
	–	–	–	–	66*
	–	–	–	–	47**

df = 20 * – .01 level of significance
** – .05 level of significance

Index 1 Row OBT
2 Row TTG
3 Row TMT

Creativity and intelligence are highly correlated

SES is not related to intelligence and creativity

Appendix

Thinking Games

Following games were used for the development of thinking among children:

1. Probability games.
2. Recognition by touch.
3. Visual spatial games
4. Communication games.
5. Games for sorting and classifying.
6. Visual thinking games
7. Games prepared by Child Study Unit of NCERT.

Probability Games

The purpose of this game is to develop concepts in mathematics It stimulates the thinking of the child.

This game consisted of ten red marbles and ten white marbles. At the initial stage, to start with ten red marbles and one white marble were put into a bag and were shaken well The bag was handed from one child to another, each had to guess the colour of the marble he will draw out from the bag Subjects guess and the actual marble of colour taken out of the bag was noted down on the piece of paper by the investigator and on the note books of the students For example

	Guess	Actual Colour	Marks
Student I	Red	White	0
Student II	Red	Red	1
Student III	White	Red	0
Student IV	Red	Red	1

After a marble was taken out and its colour noted, it was put back into the bag. The little children were greatly surprised that the answer red remained safer bet, draw after draw the game was over, students were asked to count their guess as well as the actual colour of the marble drawn In this way the concept of ratio was introduced in a playful way and they were motivated to arose interest in classroom instruction.

Modification of Game

Modification can be possible for this game by starting the game with the marbles of white and red colour into the bag and gradually increase their number by putting the another marble one by one. In this way probability of drawing a red marble would change as the game progressed

Recognition by Touch

Purpose of this game was that both visual and touch perceptions had to be assimilated and transformed into comparable schemes through which the identify of objects could be recognised. In this game children were supposed to handle objects which they must recognise by touch. The game consisted of a box and two identical collection of small objects The purpose of this game was to have children look at a single object in one collection and find the identical object by touch alone in the other collection. The chosen objects were similar in configuration but had small differences

Modification of Games

Various modifications are possible for this game i e. the investigator showed a stencil of a triangle to children and asked the shape of it, then two things which are triangular in shape were put into a bag, then children were to bring out same thing from this bag. Its shape should be same as shown in the stencil of triangle before.

The investigator made students play by various coins: 1 paisa, 2 paisa, 5 paisa, 10 paisa and 50 more upto two Rupees All coins put into the bag and students were supposed to guess by touch which coin they were bringing out, before they actually brought them out.

Spatial Transformation

The purpose of this game was knowing the outline of a figure, figuratively is not necessarily the same as knowing it operatively Only through operative knowing, the child can reproduce and transform the figure with facility.

This included variety of thinking games all of which were related to knowing the location of certain points in space in relations to other points. These games were played by the whole class: watching the board and each child drawing the required response on a piece of paper.

1. The investigator draws a certain point on one corner of the blackboard viz. X on the upper left corner and 'O' on the lower right corner. Then it was instructed that the blackboard would be turned first to the left,

then to the right and then up side down Each time children had to draw what the blackboard would look like on such supposed turnings and each time their imagined responses were checked and gave them marks for correct response, so children were very much interested to play these types of games

Modification of Game

Children were asked to write their name in reverse order like VIMALA into ALAMIV and other Hindi sentences—" हम जा रहे है " made reverse by the students such as " मह जा हेर हैं " children were asked to reverse the sequence of letters like ALF into—FLA

Communication Games

This game required operative understanding and symbolic articulation The investigator let the children discover that a message limited to the essentials was more effective than a redundant message

The game was played by two children while the remaining children observed the performance The investigator modified this game Four different types of photographs, given to student I, are as follows (1) A woman standing alone near the river, 2. A man of middle age is smoking 3. Children are playing and the teacher is standing near the children 4 Children are studying in the classroom

Student I, has seen these photographs thoroughly and handed over to student II Then a photograph is hidden by the student II. Student II asked the first student about hidden photo by limiting his communication in order to Sex, Age, Posture, Dress, Hair Style arrangements with this communication, student II handed over the bundle of photos to student I Often students later discussed the effectiveness of communication of both the receiver and giver Another modification was that ten pictures were shown to whole class for a few minutes and then deducted one photo out of the ten Then children were asked which photograph was missing? Narrate something about that photograph

All children wrote their responses on a piece of paper

Other Thinking Games

—Sorting and classifying
—Visual thinking
—Discovery task

One of the multiple classification-games was of a matrix task A square of three by three fields into which nine objectives were to be placed In that form—left to right the size of the object was increasing and from top to bottom the colour was getting darker. Students were to put the right sized and right coloured object into the field The investigator modified this game

The investigator took twenty pictures of various living organism and got them classified by the students on the rationale of marine organism (Fauna or Flora) This game was related to the general science topic which was to be taught next day.

Visual Thinking

The investigator showed one chart to children in which the only faces of animals were given on right side and rest of the body on left side, students were told to join the correct faces with correct bodies and they were to write the correct names

A set of eight pictures was shown in which—

(a)A woman was washing clothes
(b)Pouring water in a pot
(c)Bringing water from well
(d)Changing clothes on wire
(e)Squeezing clothes
(f)Ironing the clothes
(g)Arranging clothes

Students were supposed to arrange these pictures in a sequence of work

Discovery Task

'Correct discovery tasks' was another game in which a deck of forty-eight cards with various lines was made. Those lines differed in the following characteristics·

—Straight, curved, irregular
—Dark or light
—Continuous or broken
—Single or double
—Vertical and horizontal.

All the cards having decided characteristics were correct', the others to be rejected cards were shown one after another and the child had to discover the principle for accepting or rejecting a card.

There are some other modifications made by the investigator for this game, i e there were six pairs of pictures In each pair one picture had sketches of same items, i.e. table, chair, stool, almirah, cot, rack, etc. One set was shown to students in a complete form then another picture of same sketches was shown in which a few items were missing Children had to discover the missed item and to write the name of the same on the piece of paper The investigator checked their responses and gave them marks for correct responses In this way children were happy in playing and learning

Other Thinking Games

There were so many other wonderful games prepared by Child Study Unit of NCERT which were also being used. These games develop various concepts in a playway method among children

Two games "Ladders of Cleanliness" and "Game of Nutritive Diet" were based on the game of checkker board of snake and ladder Through playing this game children learnt the concept of cleanliness and of nutritive diet These games were related to the taught unit of "Body and Health"

There were ten pictures of various persons busy in various occupations. Children were supposed to identify their occupation from a shown picture and to write their correct occupation on a piece of paper Name of this game was "Who are these our helpers"?

Six pairs of pictures, showing two different types of activities in each picture were shown to children one by one and children were supposed to tell which activity will complete first For example. A *Tonga* is running and a bullock cart is running, which will reach first.

Name of this game was "Which activity will complete first"?

"Quality" in Implementation of Processes of Primary Education Project

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With the recent emphasis on quality in primary education projects committed to universalisation of education, it becomes imperative to sustain quality through various inputs and processes The present qualitative study (N=60) reveals that there is a need to develop the project functionaries through recurrent training to bring about a clarity on the concept of quality, operational and organisational demands of quality, and sustaining of quality once it is achieved

Of late, quality control has been recognized by various primary education projects as a continuous long-range programme rather than an occasional concern for quality According to Arora (1985), for quality control, on-going prevention of errors is better than their detection and consequent correction

Quality of a process may be checked with reference to the planned quality For finding the deviations from the planned quality, a large number of observations of errors committed by functionaries may be taken into account for a fairly long period of time, say six months. It is an established fact that the average error is of highest intensity, the deviation from this average will fall below or above the average figure Dale and Michelon (1970) suggest a tolerance limit of quality as +2 sigma from the average standard identified

Arora (1980) further says that for organizing a quality control programme, the quality standards should be determined. This should be followed by a training in orienting the staff to such a programme It should be then followed by checking the actual quality of current work by recording errors Thereafter, corrective effort should be carried out This requires a strong monitoring and follow-up system

Lok Jumbish Project (LJP) has been launched in Rajasthan for Universalisation of Primary Education (UPE) through people's movement The word 'Jumbish' means movement The project represents assimilation of experience gained from several innovative programmes in the country.

The LJP envisages to lay down standards and norms for infrastructure, equipments, teaching-learning material, instructional processes, organisational structure, mobilisation processes, and training programmes According to LJ document (Lok Jumbish, 1991), a critical factor in the monitoring of any activity is the development of a versatile computerised information system that can create a streamlined action-feedback system In addition to creating this computerised database, attention would be paid to setting up a system that gains acceptability as a support for decision making and planning at all levels for quality control. The quarterly outputs from the database will be evaluated and would work as indicators for improvement

With the emphasis on quality in the LJP, it was thought to investigate the notions and perceptions of the project functionaries about the concept of quality control

Problem

The problem for the present study can be stated as follows

"An analysis of the issue of quality in the primary education project"

Sample

Sixty project middle level functionaries of the LJP constituted the sample of the study

Methodology

The group discussion method of eliciting observations and qualitative data was followed After raising the issue of the quality in the project, the participants were split into five smaller groups of twelve each They were asked to share their experiences and give their comments on the quality aspect of the project Each smaller group had a coordinator to warn the group if it remained away from the issue. Later on, group reports were read in the larger group The pointed observations were noted by the investigator

Qualitative Observations

The qualitative observations which formed the part of the smaller groups are listed below

—There have been drawback and defeciencies in the implementation of the project at the local level. There has been compromise in operationalising the processes. There have been short-cuts.

—On certain occasions just formalities have been completed, consequently, there has been marginal involvement of people in the project.

—There has been very less time available for understanding the processes and people

—The standards for various processes have not been spelled out

—The project is understaffed and hence work is of low quality.

—There is a need to imbibe the team spirit among the staff.

—The concept of quality and its operational definition need to be clarified

—The present status of quality needs to be determined so that one could know whether or not quality is improving.

TABLE 1

Summary of the Weightage of Deficiencies in Maintaining the Quality in Project

Deficiency level	*Observation Frequency*	*Factors*	*Weightage %*
Conceptual	5	Operational definition of quality; dimensions of quality, assessment of quality, etc	20%
Organisational	10	Shortcuts, formalities, time factor, evaluation and feedback, mismatch, accountability, resource, team work culture, role perception, etc	40%
Operational	10	Understanding of processes mastery over processes, sustaining quality, holistic approach, etc	40%

- —The modalities for reviewing the quality of processes may be made known to everyone
- —There is lack of awareness in ascertaining the effectiveness of various processes
- —It is difficult to define the quality of processes while there can be certain principles of quality which can function as guide-posts
- —With proper planning and linking management with recurrent evaluation and corrective feedback, quality can be maintained
- —Recurrent internal and external evaluation with facilitative consultancy, quality can be maintained
- —First a small standardised model management unit (show-case block) may be set up The model may be replicated in other blocks.
- —The expansion of project should match the support system
- —There may be many centres of activities that may evolve their own processes and then converage.
- —There has to be a system of collective accountability for quality control
- —The lack of role perception and mastery of processes is deterimental to quality.
- —Quality suffers when there is centralised system of management
- —The area and span of decentralisation needs to be worked out
- —Various resource groups at block level may be created and trained to keep a watch on quality and provide consultancy
- —The compromise with quality is made due to local pressure, lack of time, lack of resources, lack of guidance, lack of commitment.
- —There is a need to upgrade the planning and management skills of the field staff
- —The criteria for 'when to consider a group effectively functional' may be worked out
- —The holistic understanding of project needs to be created at every level of management

Results

The comments of the participants show the defeciencies at the following levels

1. Deficiencies at the conceptual level
2. Deficiencies at the organisational level
3. Deficiencies at the operational level

This classification and their relative weightage from the observations is summarised in table 1

The table reveals that the project functionaries are more concerned about the deficiencies at organisational level and operational level It seems that they have a notion of their own about quality and find it difficult to maintain it due to organisational and operational difficulties

Conclusions and Discussions

With the insistence on quality in implementation of the project, it can be concluded from the present study that project functionaries have developed a concern for the quality They were aware of their deficiencies which is the first step towards improvement

In order to bring about improvement, quality aspect of the project should be an integral part of the staff trainings. Such trainings should be held recurrently so as to keep on emphasising the quality frequently

Some suggestions also came up during group discussions which need to be followed up at the organisational level, especially the problem of understaffing and lack of resources

There is also a need to update the processes used for the implementation of various project activities For sustaining the quality, the processes need to be strengthened and sustained Unless corrective and facilitative evaluation becomes an integral part of every activity, the quality in any activity can not be sustained. For this the staff training should also have such a quality that it reflects the proper quality

Furthermore, quality does not directly reside in material inputs and processes, it resides in the minds of the functionaries who handle inputs and processes Therefore, the emphasis has to be in developing the project functionaries so that they have clarity about quality at conceptional, operational and organisational levels

SCIENCE RELATED VALUES

Curiosity, quest for knowledge, objectivity, honesty and truthfulness, courage to question, systematic reasoning, acceptance after proof/verification, open-mindedness, search for perfection and team spirit are some of the basic values related to science. The processes of science, which help in searching the truth about nature and its phenomena are characterised by these values. Science aims at explaining things and events. Therefore to learn and practise science :

- **Be inquisitive about things and events around you.**
- **Have the courage to question beliefs and practices.**
- **Ask 'what', 'how' and 'why' and find your answers by critically observing, experimenting, consulting, discussing and reasoning.**
- **Record honestly your observations and experimental results in your laboratory or outside it.**
- **Repeat experiments carefully and systematically if required, but do not manipulate your results under any circumstance.**
- **Be guided by facts, reasons and logic. Do not be biased in one way or the other.**
- **Aspire to make new discoveries and inventions by sustained and dedicated work.**

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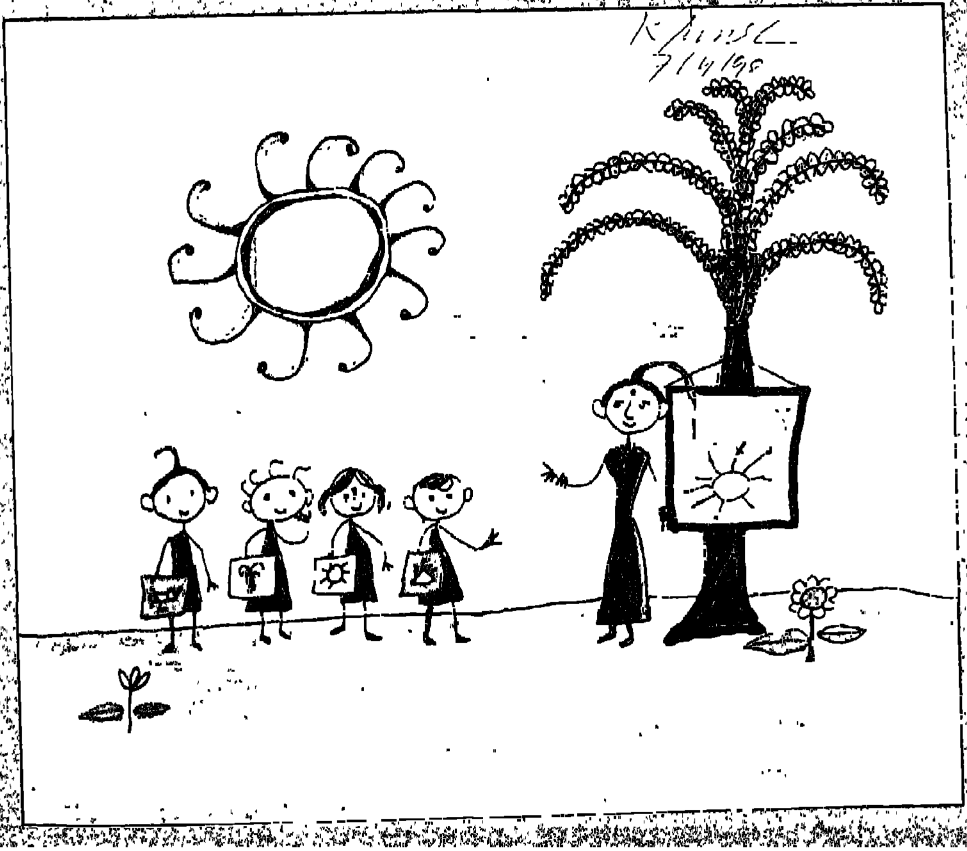

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The Primary Teacher is a quarterly brought out by the National Council of Educational Research and Training (NCERT), New Delhi. The Journal intends to give the practising teachers and concerned administrators, authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom It would carry announcements of programmes, courses of study, etc offered at various centres in India from time to time It also provides a forum for the discussion of contemporary issues in the field of education

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GANDHIJI'S TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test :

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it ? Will it restore him to a control over his own life and destiny ? In other words, will it lead to Swaraj for the hungry and spiritually starving millions ?

Then you will find your doubts and your self melting away."

mkGandhi

Editorial

On the 50th anniversary of India's Independence, we proudly remember the Father of our Nation, the founder of basic education. Tremendous progress has been made in the field of basic education since Independence. This should infuse feelings of joy and contentment as this issue brings hope for those primary teachers who want to realize the progress of our educational system. Nehruji's statement in the context of our country, can be rightly applied to primary education, being built up "brick by brick and layer by layer" This can only be achieved through collaborative efforts of parents, teachers and educators

Our leading feature in this issue is 'Introduction to Storyline Method', which is a delight for the children. Erik Hakonsson was in India recently where he acquainted Delhi schools with a different experience altogether which opened up to new possibilities. Since most educators recognise the importance of story-telling and story-reading in classroom, this quality literature can become the most important aspect of the school day for a child.

Today, the need of the hour is an effective partnership between the community, the government and non-government agencies in planning, owning and implementing educational programmes. The article 'Operation New Hope' acknowledges a greater and brighter hope as described through the personal visit of the author

In the past, the educational processes were not confronted with the kind of challenges in science and technology which we have to face now. The changes are radical and rapid. How educational television has managed to reach the masses through Herculean efforts of CIET, SIET, IGNOU and ISRO have been projected in the article 'From Space to Classroom'.

An individual's personality of likes and dislikes, interests and attitudes can also be approached by asking questions about them. 'Efficient Questioning for Teacher Empowerment' outlines such clear-cut ideas. Group practices, teaching learning processes, independent study, non-graded systems have been attempted to study student differences 'Autoletic Learning' provides ample opportunity to realize these considerations

India, being a multi-lingual country, the task of language planning and its education has been a difficult one The situation of language in North Eastern Regions has been analysed in the article 'Medium of Instruction in NER of India'.

The research study on 'Learning Achievement through SOPT" makes us conscious of the fact that the delivery of quality education programmes and their implementation through initiatives by NCERT, SCERT, NCTE is a sine qua non for every teacher. It is hoped that this issue will entrust qualitative change in teacher programmes at the primary stage

ACADEMIC EDITOR

4th

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JULY 15-17, 1998

Learning Organization:

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- Case studies

Community Participation:

- Community and school management
- Community and resource mobilization
- Panchayati Raj institutions and primary education
- Parent-teacher relationship
- Case studies

Last date for submitting abstract of paper .
February 27, 1998

Authors will hear of the selection of their abstracts from the NCERT Indian authors of the selected abstracts will be required to make a presentation of their full paper regionwise at the four regional seminars to be held at Ajmer, Bhopal, Bhubaneswar and Mysore during April, 1998. These regional seminars will act as a filter for selecting promising papers for the International Seminar.

Last date for submitting Final paper :
May 15, 1998

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FEATURE

Introduction to Storyline Method

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All children love to listen to good stories. Most children like to tell stories. So, in most schools both the teacher and the children tell stories to each other and like it. The storyline approach is a teaching method that builds on this concept. There is a story and as it goes on, the children get involved creating their own part of the story learning to use the language but also learning to investigate and argue for their creations.It is fascinating to tell stories but to be good storyteller the teacher must learn to be aware of the listener. The teacher must figure out how to make it into a good story and how to stress the main points in order to stimulate the listener's curiosity.

The storyline approach of teaching was invented in Glasgow about 25 years ago by Steve Bell and Fred Rendell It has since been introduced to many teachers in Western countries and it has become very popular in many schools.

As a teaching method it has some characteristics that suit modern society and it also seems to be very attractive to the teachers because of its charm and variety of possibilities:

— It is child-centred in a way that gives the child a position in the classroom-society that is acceptable to the child, the group and the teacher.

— The method provides a high degree of motivation for both students and teachers since it provides a structure that at the same time is flexible and strong.

— It links the basic skills of reading, writing and mathematics with the world outside the school.

— It is not connected to any specific system of books or other material but can be accomplished with the material available.

— It fits with the constructivist viewpoint of learning and supports both the academically weak and motivates the strong.

The basic line in the approach is a story as one might guess from the name. It can be a story from a book already written or it can be a story invented and developed by the teacher or by the teacher and children together.

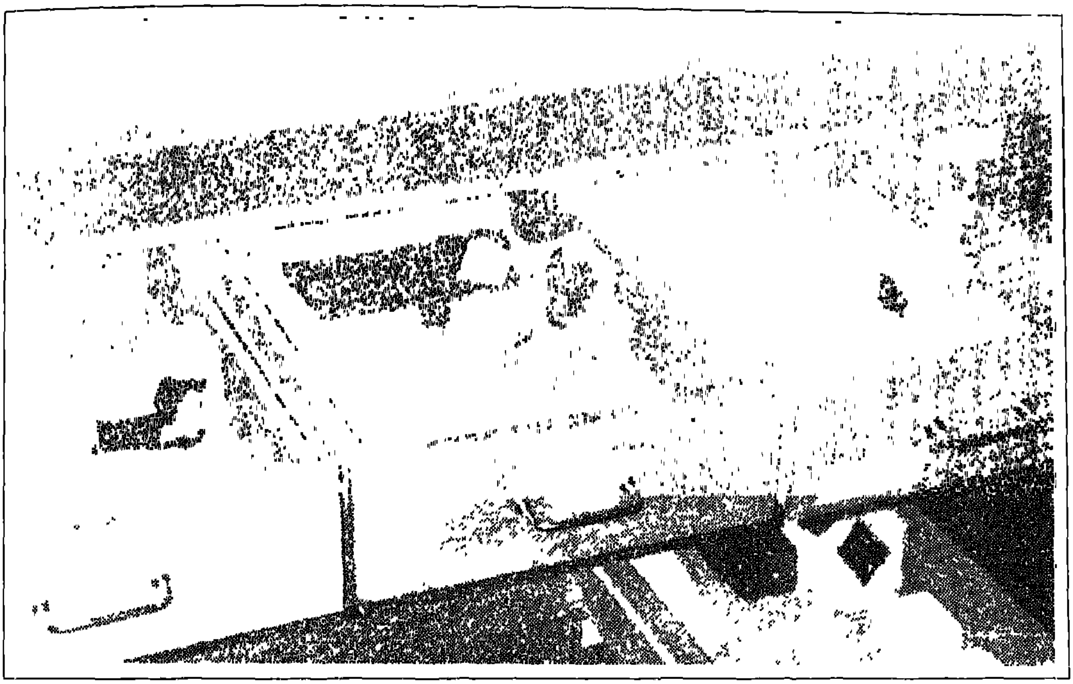
The starting point is often a question that appeals to the student's knowledge and imagination like "What do you think a doctor has in his briefcase?" or starting from a picture "What do you think this old lady grows in her garden?" The questions should always give the children a possibility to show what they already know.

The starting point can also be the teacher reading the beginning of a story and then when the students are introduced to the context; a question to make them using their fantasy and knowledge anticipate what happens next or a question to make them imagine some aspects of the story that are not explicitly formulated. It can be questions about what things look like and/or what people might think or say. To such questions all answers are correct or you might say there are no right or wrong answers. The only one who knows what is right or wrong is the child. The teacher involves the children in the story by asking them these questions.

As the story goes on the answers from the children should be included. There should not be too many questions. The flow of the story must not be interrupted. On the other hand the children's fantasy and reflexions must be kept busy. The teacher must find a good balance between telling the story and asking questions. Not all questions are equally important.

Storyline Workshop at Swati

(You can see a stationery shop and a toy shop, the street with trees and people.)



The main questions—those that make the story go on and stimulate the imagination and reflexions of the students are called "key questions". They can be anticipated and prepared by the teacher. To those questions the children's answers might be visualised Instead of answering in words they can make drawings, etc Instead of naming what you think is in the doctor's briefcase you can draw it Things and models can be done in clay, paper etc In this way the students can include things they have seen and know by experience but cannot yet name. And once the things are visualised the students and the teacher can talk about them and name them. The visualised ideas can be compared to each other and the student's experiences from life outside school can come to the fore. The drawings and the other materials can be organised in a nice way and put up for display .

As the story proceeds the student's productions little by little illustrate the progression of the whole story in a very materialistic way This method seems to contain all the necessary aspects of good teaching How is it practicable? What does it demand from the teacher? The method is used in many Western countries and is popular among some teachers but still many teachers resist applying it. Why is it so? How do we encourage the teachers to apply such a method?

Basic Educational Principles

Good teaching is not always easy Teaching can be done in many ways In some countries the teacher has freedom to choose the method she likes, in other countries the choices are more restricted.

·Some methods are based on traditions while others are based on modern scientific research, but neither research nor tradition can prescribe what children will like and it cannot totally prescribe good communication So whatever the rationale for the method is, there is always a space for the teacher's own decisions Therefore, it is good if the teacher can lean on some basic educational principles in all her dispositions and communications with the children.

These are the basic educational principles in the storyline approach.

1 The children learn by their own activities Learning is an active process.
2. The approach is built upon a continuing story going from one key question to another The key questions carry the story along and the children's response to the key questions are their learning activities The response often includes research activities and always discussions So the children learn together.
3 The organisation changes between mutual presentations by the teacher or by children and work in groups. In the groups the children often produce material things as a response to the different challenges.
4 The process is visualized and then made real. The children produce models in paper,clay, etc. They paint and do wood work, etc They dramatize and roleplay, they make puppet shows and toy theatre All ideas are transformed into visual and real activities
5 The approach must stimulate the children to solve problems in their own way and to use their imagination. So they have to invent solutions, they have to talk and discuss, they have to make many attempts to find adequate responses to the key questions That is the idea

It is mainly in this aspect that the respect for the child's personality is to be found. The whole structure in the approach supports the child's imagination so that children who normally are very shy also participate and also look for the correct responses They learn to accept their own ideas and thinking. That is a main step towards self respect.

What Do You Do in Classroom?

First you have to get an idea about a good story It is natural to start with a story that is already written and maybe one you know well. When you prepare yourself for the teaching you read the story and find some parts that are available for questions to the children. The questions should appeal to their fantasy and their knowledge. Then you start telling the story. When you get to a usable passage you stop and ask the children the question that makes them imagine and reflect. Their answers can be made individually or in groups but they should always be made visual and concrete. It can be drawings, etc When children have made their drawings the teacher asks them about these drawings partly to get to know how much they know partly to get them to invent answers from their imaginations

Let us give an example

THE MONKEY AND THE CROCODILE
(FROM PANCHATANTRA)

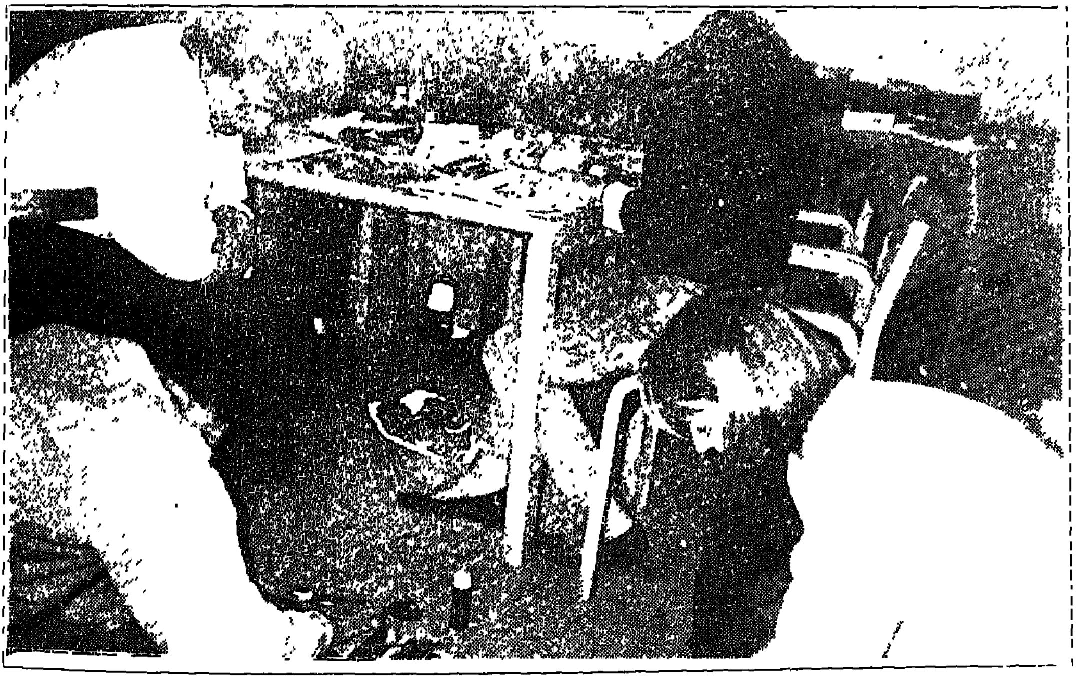
First step

First the teacher asks the children if they know what the jungle is like. Some will have some answers and tell that there are many trees in the jungle. Then the teacher will ask them to design a tree each and colour it in the right colours. The teacher makes a river and places it on the wall. Then all the trees are cut out and glued up on the wall around the river so that a very jungle-like picture arises.

Then the teacher asks the children about their trees. What are their names? How tall are they? How old are they? Have they got fruits? (maybe some fruits can be designed and put on the trees). Do the trees prefer sunshine or cloudy weather? etc. The children's answers cannot be incorrect. They themselves have invented the trees. But still the teacher can learn a lot about the children's knowledge of trees from the answers. The teacher herself can make a rose-apple tree to be sure there is such one. If the teacher wants to talk about animals the children can also make some animals and put them up. One can talk about their names, what they eat, etc. At least some monkeys should be put up there.

Second step

The teacher reads the first part of the story. When she gets to the part, where the crocodile tells that he lives together with his wife and family, the teacher stops again. For example she asks the children "What is it like to be a crocodile family? Where do they live? What does the place look like?" And the chil-



dren get together in pairs or in groups of three or four to make a drawing of the crocodile home. All the drawings are put on the wall along the river.

Third step

And the teacher goes on with the story and tells how the crocodiles bring home rose-apples, and maybe a group of children plays the role of the crocodile family saying the things to each other that they imagine the crocodile man and crocodile woman say to each other. The family sits in the middle of the classroom while other children play other crocodiles around them when the man comes home with some rose-apples. Maybe the other crocodiles comment what happens (the teacher asks them what they think about it).

Fourth step

The teacher continues the story. Also the conversation between the crocodile and his wife can be dramatized and the children and the teacher can discuss how the crocodile can solve his problem, but in the end the crocodile must ask his friend the monkey to come and visit his home. When the monkey agrees the teacher stops reading. Again the teacher must ask the children how this visit can be organised.

In groups of three or four the children again invent different ways to transport the monkey and they must explain to the other children how their system works. The solutions are put up on the wall while they explain. The teacher accepts all explanations but let the other children ask questions and discuss whether it is possible or not.

Fifth step

Then the teacher reads the rest of the story and all the children let their animals on the wall give a comment or they design how the animals pity the crocodile or laugh at it.

It is obvious that the questions the teacher make on the way will guide the children's activities and the teacher can go as deep into any of the subjects referred to as she wants. She can also introduce special topics if that is relevant In the story she can turn the focus on the weather and climate, on biological topics, on family life, on food, etc. In this kind of work language is always very much in focus. The children are stimulated to talk to each other in the groups or pairs, to the whole class and to the teacher Active language is important in the acquirement of concepts and knowledge about things and of course in the development of one's own language.

The Structure of the Work

The story is the dynamo that makes the process go on. But to involve the children some questions must be prepared. The questions should make the children active on different levels. They should actively use their imagination and make choices of their own. The teacher must respect these choices. So when the children propose other solutions for the problem in the story (like the transportation of the monkey) than the author's actual solution one must talk about what the story would be like if the children's solutions were accomplished.

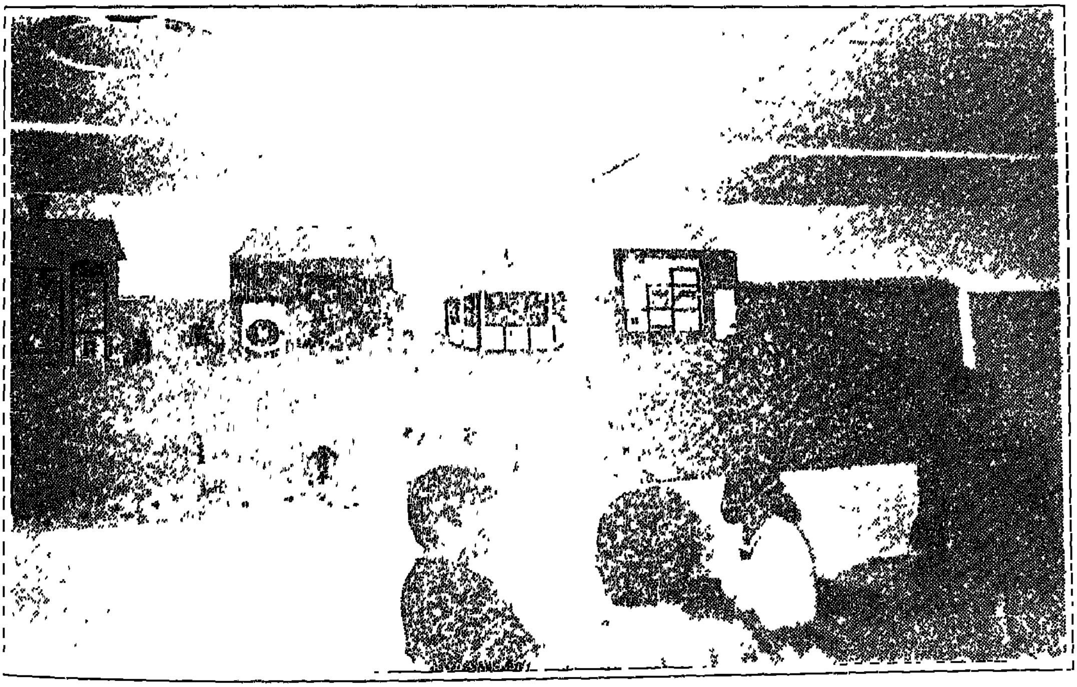
It is better if the children's solutions can be incorporated in the story but one cannot always do that. That situation is a cue for a conversation about how to make a good story

So the teaching changes between the teacher telling the story, the children discussing and proposing answers and talking about the children's answers. This structure presupposes that the children can handle listening, working in groups and working individually. It also presupposes a wall to display things on as well as some space. With fifty children in a rather small classroom it certainly takes some creativity in the teacher and a certain discipline in the children to make the organisation work

With one teacher and fifty children the group work should be limited to rather short periods and the instruction should be precise so that the children know exactly what task to accomplish. Drawing a crocodiles nest is a good example of such an activity. Of course also the children must have time to get used to this way of working. The change from your actual style into the storyline approach should be made in small steps. Therefore the teacher should begin with a rather short and controllable story.

The group work especially demands a degree of discipline in the children If you have twelve groups of four to five children in the same not too big room the children must learn to talk in a low voice and to move around calmly and considerately.

You do not need much material. If you do not have pen and paper for each student, old newspapers and weeklies can be used If you do not have scissors for the children then figures can be made by tearing the coloured paper into pieces. But then the class must be used to seeing the teacher work with this decoration style



before the storyline starts It is much easier to get the children accustomed to this form of school work if it starts from the first form, but of course it can be introduced at any level.

Making Your Story

In the mentioned case every child in the class had its own representative on the wall either in the form of a tree or in the form of an animal or even in the form of a part of another drawing So when the story is visualized on the wall every child can identify themselves with something in the model of the story.

The above mentioned example is based on a well known Indian fairytale. The teacher can also use a modern story made for children or the teacher can create a story herself or together with the children. Doing that it helps to have every child represented by a character on the wall (or in any other type of creation you make). By doing that every child can be asked to respond on behalf of their character to whatever happens in the story. So every character in the story can contribute to the story by its actions and its comments.

Let us give another example:

THE VILLAGE:

First step

In groups of four the children are asked to imagine they have the possibility to make a good house. The house is drawn, cut out and put up on the wall making up a little village and then one can add trees and a river etc. There is a lot to talk about.

Second step

Every child in the class creates a person that lives in the house the group

has made. The creation is a drawing of this character. It is cut out and placed on the wall. The group creates persons that belong together as the group decides it. It can be like a family or like a group of friends. Each of the students is then asked questions in a way that forces him to invent characteristics of the person. Like:"How old is this person? Does he have any diseases? What are the names of his mother and father? What does he like to eat? etc.

The answers always create topics of curiosity. If two children from the same group tell different things about their person's eating preferences the teacher can ask how they manage to eat together, etc.

Third step

With the village introduced and the characters identified episodes can be invented or just taken from real life. The teacher might let a person break her leg in an accident in the street. How do the others respond to that? A house may be on fire. What do people do? etc. Feast events, holiday events and sport events can take place. Children might get lost and found, people get jobs and lose jobs. Many things that the students know a lot about can happen in the village. Through a series of events the story grows.

How Do We Introduce Written Language?

In the above mentioned examples I have mostly talked about telling stories as oral activities. Very often we want to supply this work with written activities How can we do that in a meaningful and natural way?

At the primary level school beginners normally don't know how to write. Nevertheless, they have often seen a lot of written texts around them in the street, in advertisements, packings and commercials, etc So they have some ideas about reading and writing And they very often know or guess what some of the words mean The point is to utilize this knowledge in the story. For example names of fruits can be found on packings, names like Coca Cola can be found on posters, etc. In the cities there is a rich world of words to study around you and even in the smaller villages you will find some advertisements, etc. So if the story includes going shopping, shopping lists can be made almost on the basis of copies from advertisements. If the story includes naming things the names can be taken from the words around you. Street names, traffic signs, name badges etc. can be used on the children's drawings. And if the children themselves wear a name badge the words can be compared with the name to see if they contain the same letters

As the story proceeds headlines or statements from the children can be put on the wall beside the visual pictures from the story

As the story is something interesting for the children they will want to talk about it to their parents and to other children outside school It is therefore natural to establish a kind of correspondence with another class on the basis of drawings and a few words In this correspondence the use of words and sentences gradually will increase. Correspondence can be done on an individual basis, in groups or by the whole class In many classes they combine these possibilities.

How to Develop the Method

The storyline approach can be used for many purposes It has been used successfully in the kindergarden as well as in teacher training. It has even been used to develop a bank that needed to expand. The point is that it offers a structure within which you can stimulate all kinds of thinking and research.

The method can be accomplished in a short period like three-four hours and it can be the basis for a year-long teaching process. Most teachers use it for a period of forty-sixty hours for each story. So any teacher can introduce it in a way that suits her. She can test how it works and how she likes it over a short period and then decide whether she will continue. The general experience is that teachers use it more and more but they also like to combine it with other methods. Some teachers say that working with the storyline approach gives them ideas to use when they work with other methods.

The individual use of the method also stimulates the teacher to develop it. Especially they try to refine the key-questions and as the method gives birth to a lot of funny situations and statements from the children the teachers like to tell each other about the work. In this way it stimulates the cooperation between teachers.

The main problem using this method is that the children learn individually and it takes a good teacher to keep an overall impression of the students' progress. That is why some teachers prefer to combine storyline with other methods with which it is easier to control the children's progression.

Another problem is the need for space. If the classroom is very small it takes a good portion of imagination to figure out how to have the children work in groups and how to have them produce the visual things. In Scotland where this method has a very long tradition I have seen very small rooms utilized in a very creative way. But some teachers don't know how to handle this problem.

A problem in some schools is that the class must share the room with other classes. Then the teacher must take that into consideration, which can be difficult

Nevertheless the storyline approach proceeds to gain ground in schools all over the world because it stimulates creativity, independent thinking and it motivates the students very well.

MOVEMENT

Operation New Hope: An Initiative in Partnership in Primary Education

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This paper contains personal experience of the author who participated in some activities of SECMOL—a voluntary organisation working in the area of primary education in Leh district of Ladakh. The main focus of the various activities of SECMOL was on creating awareness in the community about the need of education for all children: the organisation has, to a great extent succeeded in bringing together NGOs, Community and State government agencies in creating new hope for primary education in the district.

WHEN India adopted its Constitution, provision of universal basic (elementary) education to all the children in the age-group 6–14 years was given top priority among various programmes planned to take the country on the path to progress The provision consisted of creating conditions for access to education for all the children, their stay in school for eight years and thereby facilitating their acquiring identified knowledge, abilities, skills and develop habits, attitudes and values necessary for a healthy and productive life. In 1997, the fiftieth year of our independence, we are still struggling to attain those goals.

This, however, does not mean that nothing has been done in this direction During the intervening period, the government agencies (both at Central and state level) have been instrumental in taking primary schools to the doorsteps of each child in majority of urban and rural areas. Some non-government agencies in many cases took the initiative of providing schooling facilities and undertaking innovative projects with a view to provide good quality education. Yet, since the attempts were planned in isolation and implemented piecemeal by these agencies, they could not have the desired impact. May be today's need is the *effective partnership of all categories of people in the society* whether it is government agencies, non-government agencies, general public (especially the youth) and political forces in planning, owning and implementing the educational programmes

One can see such a partnership taking shape in Leh district of Ladakh During my recent visit of Leh I witnessed events which would have been difficult to believe if I had not been personally present there. It was a pleasant surprise to find/ observe

— Headmasters paying Rs 500 out of their pockets for boarding and lodging to participate in a ten-day orientation programme. The programme aimed at exposing them to the latest trends in primary education with a view to facilitate teachers in primary sections/feeder primary schools in adopting relevant teaching learning strategies.

— Village Education Committees concern to ensure proper functioning of government schools with a view to encourage more and more enrolment in these schools so that children get opportunities for culturally relevant education rather than getting alienated from their culture by studying in privately managed schools having different philosophies

— Government's concern to make primary education financially viable by ensuring sufficient enrolment to make teacher pupil ratio reasonable for two teachers and bringing down per capita expenditure.

— Political and administrative concern to ensure peace of mind amongst teachers by planning transfer through consensus after open discussion with headmasters Zonal Education Project Officer (ZEPO) and teachers

— Community's concern to ensure placement of teachers and provision of other facilities in each school.

— NGOs intense concern to ensure proper and effective coordination of the responsibilities of each agency, creating awareness about the significance of education in the community, creating infrastructure and opportunities for teacher training, development of relevant material including instructional material for children, etc

All this is happening in Leh district of Ladakh There is a wave for reform in education which is evident at every level There is openness and freedom of expression on the part of everybody concerned with education

I participated in two meetings One on 26 May 1997 About 45 headmasters, 5 ZEPO and Hill Council Chief, Executive Counsellor and Member of Parliament from Ladakh The other between community members of Shara village and Chief Education Officer and representatives of an NGO (SECMOL) on 27 May, 1997. The interaction in these meetings gave me an opportunity to witness real *'democracy in action'* A culture of accountability of everybody concerned has creeped in through the process of mutual discussions.

The process of this attitudinal and practical change started in 1993 when the Education Department started encouraging public participation in running the educational institutions The first step in this direction was a seminar organised by the CEO of Leh in which practicing teachers and some voluntary organisations were invited. The purpose was to identify the problems of education in Ladakh. The seminar suggested major changes in the implementation of educational programmes.

Ladakh comprises of two districts i.e. Kargil and Leh, each having a population of approximately 1 lakh. In Leh district, there are five blocks which are at different levels of educational development There are about 262 government primary schools/sections spread over these blocks. Due to poor performance of children from government schools at high school level, of late, there has been a large scale boom of private schools leading to shifting of children from government schools to these schools

Low enrolment ratios in government schools and cultural environment of private schools have become matters of concern both for the government and public. The public concern to preserve its culture made some voluntary organisations join hands with the government agencies to plan strategies to implement the measures suggested in the seminar

Students Educational and Cultural Movement of Ladakh (SECMOL), a voluntary organisation took up the issue and launched a campaign named Operation New Hope (ONH) in 1994 as a follow-up programme and was joined by Ladakh Ecological Development Group and Leh Nutrition Project thus making it a movement with triangular cooperation of several NGOs, the government and village communities.

Objectives of ONH

— To introduce to the public the concept of adoption and improvement of government schools as a better option than opening private schools. This is the key to better care and ownership of local schools.

— To introduce a new activity based on locally relevant approach to early childhood education with a view to make schooling less painful and more interesting to the children.

— To bring government schools (beginning with primary) up to or above private schools in effectiveness, standards and catering potential.

— To produce Ladakhi versions of early primary textbooks and teaching material to make them more relevant and understandable to Ladakhi children.

— To use the above factors to revive the interest, strengthen the confidence and enhance the dedication of the government school teachers.

Programmes Undertaken

1. Formation of Village Education Committees

Formation of VECs followed awareness programme conducted by young students of SECMOL in villages through cultural programme and showing video films. The young boys and girls would visit the villages in a truck (nicknamed as the *Singing Truck*) as the youngsters used local songs and dramas to inspire the public to own government schools and enroll their children in them.

Radio was used as the main medium to give information about the need to constitute VECs and motivate people to come forward and join the movement to improve education system in the district schools. One of the conditions for registration of a VEC was that it would bear expenditure for the training of teachers working in primary schools in that area

In 1994 VECs were constituted for 34 schools which were adopted for ONH project. By now i.e 1997, all the villages have VECs. Each VEC takes care of 2–4 schools.

2.Training of VEC Members

The most significant aspect of the movement is the training of VEC members It was felt that mere constitution of VECs cannot have the desired effect unless they know what they are supposed to do A series of four training programmes each of five days' duration were organised during March 1997 to acquaint the members about their role and the type of activities they can undertake to activate the administration as well the public with reference to making education programme effective and meaningful Each programme was attended by 75–80 members belonging to approximately 25–26 VECs. From each VEC at least three members—one of them a woman participated in the training programme

3.Adoption of English as Medium of Instruction

On public demand English has been adopted as medium of instruction in all primary schools right from class I, thus bringing the government schools at par with private schools Efforts are on to sort

Orientation of Teachers

out practical problems being faced by teachers and children as an outcome of this policy decision through development of locally relevant instructional material and planning training programmes for teachers.

4. Orientation of Teachers

During the past two years at least one teacher for each primary school has been oriented in adopting teaching learning strategies that make learning a joyful experience for children They have also been trained in developing teaching learning material from totally available sources and waste material

5. Orientation of Headmasters and ZEPO.

The feedback received after the teacher training programme necessitated the planning of orientation programmes for headmasters and supervisory staff as a support to implementation of child centred education at primary level. A ten-day residential orientation course was organised in May 1997 for about forty head-teachers and five ZEPOs to acquaint and orient them in child centred teaching learning strategies, school and classroom management strategies, modern trends in supervision and concepts of multi-level and multi-grade teaching.

Active participation in various activities by each participant indicated their will to learn and implement various programmes which was evident in the confidence they depicted in their interaction at the end of the course

6. Offering Pre-primary Level Education

Pre-primary level education is being offered on a very small scale but teachers are being oriented in school readiness strategies to prepare the children for formal school education.

Suggestions for Consolidation of Movement

No doubt a lot of interest and motivation has been created in all concerned with education of children at different levels, a lot still needs to be done to consolidate and sustain the movement. The areas need attention are.

— *Continuous orientation/guidance to teachers.* Since there is no provision for pre-service training of teachers, they need continuous inputs in various aspects of handling children.

— *Developing the capacity of blocks* (especially two out of five) which depend on other blocks for supply of teachers. SECMOL has initiated action by providing young boys and girls from these areas opportunities to have hands-on experience in the field and also participate in various orientation programmes organised at SECMOL headquarters They are expected to take up teaching jobs in those blocks.

— *Better coordination* needs to be planned between the three agencies i.e. NGOs, State government and the community.

— *District Institute of Education and Training (DIET) at Leh* needs to be strengthened to take care of the need-based orientation of personnel associated with primary education. Efforts are being made to get some policy decisions made in connection with staffing of the institution with people who are acquainted with needs of the district.

EXPERIMENT

From Space to Classroom

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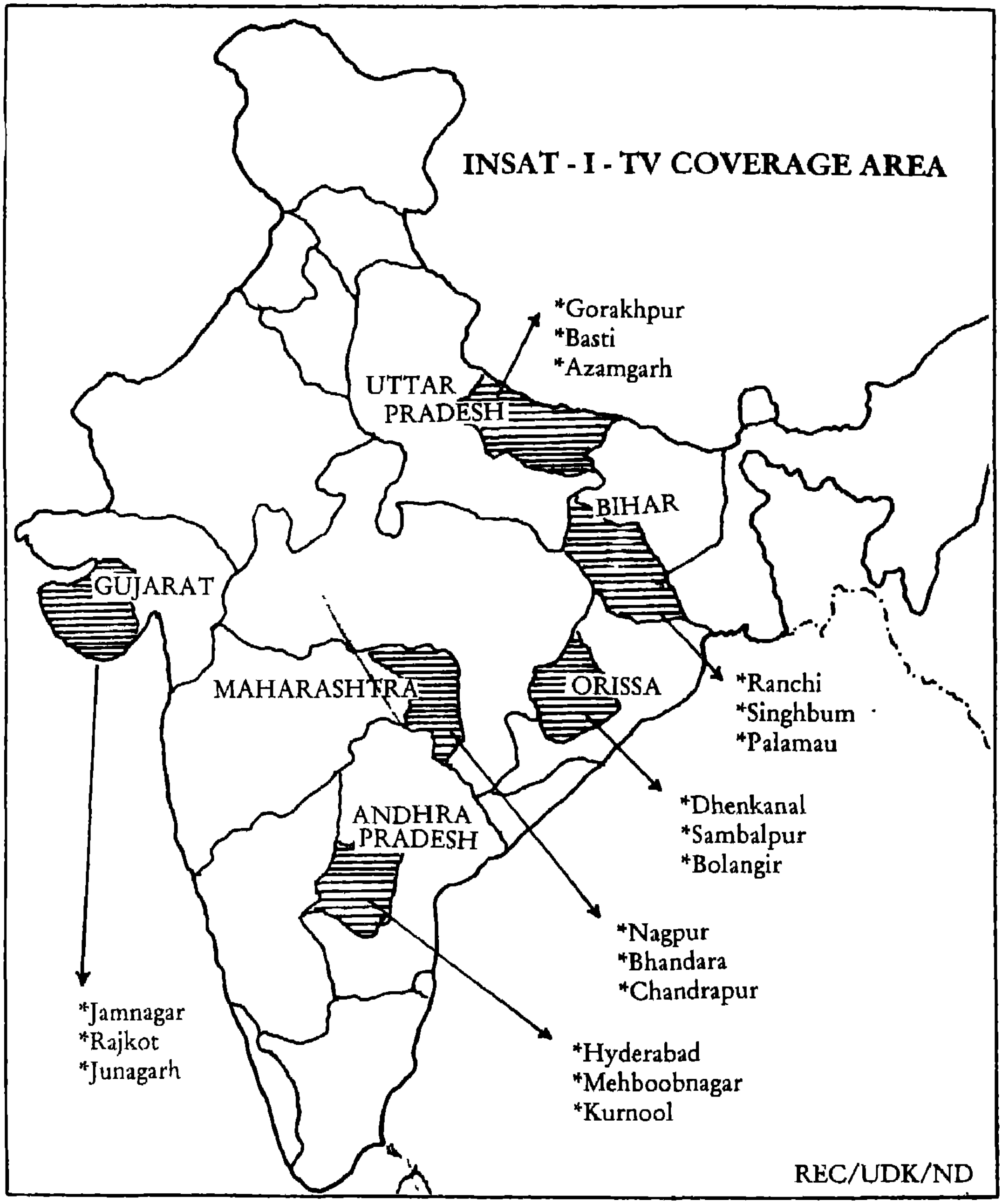
> *A most important truth, noted Tagore, which we are apt to forget is that 'A teacher can never truly teach unless he is learning himself A lamp can never light another lamp unless it continues to burn its own flame." Undoubtedly teaching is a very creative endeavour which establishes a vital and enduring link between the teacher and the taught.*

LET us not forget that even this profession is not unsusceptible to the danger of getting stiffened into a monotonous routine activity offering little joy and fulfilment. Very often, it so happens that this noble profession is nothing more than "talk,talk and talk". So it is imperative on our part to do some critical and imaginative thinking about our profession and to make teaching more meaningful, rewarding and uptodate It is obvious that the teachers who enrich their intellectual resources by continuous and creative reading are always at an advantage True, what we read and reflect upon may not always have a direct bearing on what we teach in the classroom But reading definitely gives a perspective, as Dr S.Radhakrishnan said, it creates a kind of 'meditative space' in us. So it has a humanizing effect It enables us to apply the pedagogical principles to actual classroom teaching with greater maturity, objectivity and wisdom; also we remain mentally active, curious and creative. "The teacher who has come to the end of his subject, who is not furthering his knowledge, who merely repeats the lesson to his students, can only load their minds, he cannot quicken them," said Tagore

In education, the superiority of the audio-visual methods over the traditional system of classroom based instruction also depends upon the quality of the camera in depicting and presenting the objects and events in a way that is almost impossible for a man because of inherent limitations India has a well knit system of education but the steady growth in its


INSAT - I - TV COVERAGE AREA
UTTAR PRADESH
*Gorakhpur
*Basti
*Azamgarh
BIHAR
GUJARAT
MAHARASHTRA
ORISSA
*Ranchi
*Singhbum
*Palamau
ANDHRA PRADESH
*Dhenkanal
*Sambalpur
*Bolangir
*Nagpur
*Bhandara
*Chandrapur
*Jamnagar
*Rajkot
*Junagarh
*Hyderabad
*Mehboobnagar
*Kurnool
REC/UDK/ND

population poses a problem specially in educating the masses. The dream of hundred per cent literacy rate is yet to be realized.

Before coming to the theme of the paper, here are some basic relevant concepts in space science for the benefit of teachers

What is Space?

It is not possible to give an exact definition of space. However, we can generally say that the region above earth's atmosphere can be taken as space. Going up from the surface of the earth, the atmosphere gradually becomes thinner and thinner At very great height, the atmosphere becomes extremely thin and gradually merges into space The earth's atmosphere does not have a clear-cut outer limit and therefore there is no clear demarcation between the atmosphere and space. Just as it is difficult to say where space begins, it is also not possible to say where it ends. There is no air in space There is no scattering of light in space. The sun and stars look very bright and brilliant and the stars do not twinkle either. There are all kinds of radiation light and particle in space Light of different wavelengths like Gamma rays, X-rays, Ultraviolet rays, Visible infrared rays and Radio waves from the sun, stars and other heavenly bodies would be always coming in full intensity. In space there are also charged particles like Protons, Alpha particles (Helium Nuclei) Electrons, etc. travelling at great speed and coming from all directions These are called Primary cosmic rays. Some of these particles do manage to reach the surface of the earth penetrating the whole of the atmosphere which is comparable to a plate of lead about 12 meters thick.

How Does a Rocket Work?

You are familiar with the sparking rockets that go zooming high up in the dark night during the Diwali festival. These small toy-rockets and the big rockets for launching satellites work on the same physical principle which was first given by Isaac Newton almost 300 years ago This principle is known as Newton's Third Law of Motion When hot gas of the rocket rushes out through the nozzle at high speed, the rocket gets a push in the opposite direction and consequently rises up. Using a rubber balloon we can easily understand how a rocket works Hold an inflated balloon by its nozzle down and suddenly release it, as the air escapes from the nozzle the balloon moves up in the opposite direction. The zig-zag motion of the balloon is of course due to air currents.

History shows that rockets have been in use for several centuries In olden days rockets were used only as a weapon or in fire work display for entertainment. During battle of Srirangapattnam in 1792 and 1799, Hyder Ali and his son Tipu Sultan of Mysore had defeated the British army by using rockets. The most significant use of rockets in war was witnessed during the second world war when German engineers perfected V-2 rockets and used them successfully against England.

Scientific study of rockets was first carried over by the Russian scientist Knostantin Tsial Kovsky during the early part of the present century and is known as the father of space flight, because of his classical work "Exploration of the Universe with Rocket Propelled Vehicles."

Scientists used the captured V-2 Rockets for studying the physical properties of the upper atmosphere Such rockets are called Sounding Rockets which carry scientific instruments and a small radio transmitter Informations are transmitted to ground by the radio transmitter in form of loaded radio signals and which further is decoded for use of the information

In India several sounding rockets as well as a rocket for launching small satellites have been developed by ISRO. India's first rocket launching station at Thumba near Trivandrum in Kerala state was developed in early sixties and the first sounding rocket from Thumba was launched in November 1963 Since then several new types of sounding rockets have been developed which are used for conducting scientific experiments in upper atmosphere and Ionosphere In addition to this, there are two more rocket launching stations, one at Sriharikota in Andhra Pradesh and the other at Balasore in Orissa.

What Is Remote Sensing?

A child within a few weeks after its birth, begins to learn about things around. It begins to recognize its mother on seeing her without touching her or being touched by her That is Remote Sensing—understanding some of the properties of an object, with the help of light received from the object falling on the human eye

Modern "Remote Sensing" is an extension of this methodology Remote sensing technology is used to recognize features on the earth's surface which are of importance for economic and commercial purposes Such purposes are: Agricultural production of food and other vegetation, estimation of availability of water for domestic and industrial use and for irrigation, estimation of forest health and forest wealth, location of areas where a closer examination of the ground is likely to yield mineral ores, etc This can be done by using visible light available. Some features are better recognized when visible Infrared Light and Radio Waves are employed

Space Application Centre, Ahemdabad has carried out several remote sensing experiments for agriculture, forestry, water resources and geology, using aircraft platforms. We had also placed similar equipment on one Bhaskara Satellite India's first remote sensing satellite, IRS–1A totally built within the Country, was successfully launched from the Baikonur Space Port in the USSR on 17 March1988, with a view to study India's agriculture, water resources, ecology, geology, marine fisheries, forestry and mineral deposits for three years The data sent by IRS–1A was received at the ground station at National Remote Sensing Agency (NRSA) at Hyderabad

What Is a Satellite?

An object which revolves around another object is its satellite. Earth is a satellite of sun, moon is a satellite of earth There are natural satellites, but these days there are a number of man-made satellites orbiting in space around the earth. A number of nations have launched satellites in space to serve their various purposes.

You must have heard about Aryabhatta India entered the satellite era in 1975 with the launching of Aryabhatta This was followed by Bhaskara–I in 1978. This provided data on earth resources and information about weather. India's second earth observation satellite, Bhaskara–II was launched in November 1981. These satellites were used for meteorological purposes and scanning of earth's resources.

The Ariane Passenger Payload Experiment (APPLE) was yet another proof of India's capability for handling space-based communications technology The APPLE was launched in June 1981 with the help of France. Prime Minister's message to the Nation on 15th August, 1981 from the ramparts of the Red Fort in Delhi was telecast simultaneously throughout the country through APPLE. It was also used for teleconferencing and teaching certain advanced level courses to the students of IITs and that of other universities

Geo-Stationary

INSAT has been so positioned in the orbit at about 36,000 kms away from the earth that its speed of revolving around the earth is same as that of the earth spinning around its axis. Its location is at 74 E longitude in the synchronous orbit. It, therefore moves along with the earth at the same speed and since it faces towards India, it is geo-stationary with respect to our country.

Satellites are multi-purpose and are intended for (i) Telecommunications (ii) Forecast of weather and other meteorological observations (iii) Data Transmission (iv) Direct telecast (v) Nation wide net working

The first Satellite INSAT–1A was placed in the orbit on 10 April 1982. Unfortunately, it had to be abandoned on 6 September 1982 due to certain technical snags The second was launched on 30 August 1982.

Thrust of TV Service

The main objective of the TV service through INSAT-I is to bring about socio-economic development of the selected remote, backward areas of the country Some of the main thrusts of the TV programmes are· (i) To increase agricultural productivity, (ii) To stimulate participation and involvement particularly of the weaker sections, in the developmental and extension activities, (iii) To stimulate the rural masses to supplement their income through allied jobs/activities, (iv) To promote better health and hygenic living and family welfare, (v) To inculcate scientific temper, (vi) To promote social justice, (vii) To stimulate interest in news, current topics, sports and games and other important events, (viii) To improve quality of formal and non-formal education of young children and enhance the competency of the primary teachers.

INSAT–2B another multipurpose satellite launched successfully with ARIANE launcher from KOUROU in French Guiana on 23 July 1993

INSAT–2D carrying 23 transponders to provide essential telephone and television services was launched successfully from KOUROU in French Guiana on 4 June 1997, making the country self-sufficient in telecommunication services.

INSAT–2E, now on the anvil, will provide enough transponders for lease to private and government agencies in the years to come.

Today we are among the first six in the world as the INSAT and IRS (Indian Remote Sensing) are at the cutting edge of technology in terms of satellites. In terms of type of money "we are spending and the types of benefits it is accruing to the country, we have received appreciation from both the developed and developing countries", says Shri K Kasturirangan, Chairman of Indian Space Research Organisation (ISRO) He further said, "The IRS–IC (launched by India on 28 December 1995) is India's first Satellite to offer stereo-views of the earth from space and most advanced civilian remote sensing satellite in Orbit is very much in demand by the global remote sensing community and the American ground station at Normal in Oklahama is already receiving data from IRS together with a ground station in Germany"

The ISRO scientists are now working on the Geosynchronous Satellite Launch Vehicle (GSLV) which is capable of launching a 2500 kg class of communication satellite with the help of cryogenic engine.

Educational Television

Television was introduced in India in 1959 In the present network of Doordarshan (Television) in India, there are more than 530 terrestrial transmitters reaching over three quarters of the country's population and 20 programme production centres and many more are coming up. With the availability of two Domestic Communication Satellites (INSAT–II Series), the Doordarshan has recently launched five new National Satellite Channels and ten more Regional Networks are being set up.

"School Television Service" which was started in the early sixties, addressed specific problems of teaching of sciences to 800 schools in Delhi The problems addressed were·

(a) New science curricula
(b) Inadequately trained science teachers
(c) Poorly equipped laboratories

The programmes on science were addressed to the higher secondary level The evaluation of the project gave encouraging results.

Educational television became a major thrust area in 1975-76 with the Satellite Instructional Television Experiment (SITE) using the American satellite ATS–6 demonstrated the potential of satellite based communication system to reach large numbers for educational purposes. The television programmes in the morning were exclusively directed at children of 5-12 years and in the afternoon for education of the general population

The main emphasis of the programmes for the primary children was that, "Science is every where" The credo being that the immediate environment can be questioned, manipulated and understood by using scientific methods. 2400 remote villages of six states namely, Andhra Pradesh, Orissa, Gujarat, Bihar, Uttar Pradesh and Maharashtra participated in the experiment Another notable achievement of this experiment was the effective use of satellite for teacher training. The media-mix was of a daily TV lessons, radio programme, experimental activities and print materials which covered as pedagogical issues and subject competencies In all about 48,000 teachers were trained in vacations in two phases during the project SITE.

After the success of the SITE, the Central Institute of Educational Technology (CIET) at New Delhi and State Institutes of Educational Technology (SIET) in six states were set up in 1983-84 under INSAT (Indian National Satellite) for education project to produce educational software at the school level. The INSAT—ETV service provides for telecast of educational programmes of 45 minutes duration in five regional languages. Programmes are produced and telecast for 5-8 and 9-11 year old children from Monday to Friday Programmes for the primary school teachers are telecast every Saturday.

Many research studies have been undertaken on the impact of school television on the academic growth of the school children. The results have been encouraging

Under classroom 2000+ project, the CIET demonstrated the interface of live television lessons with computer-linked keypad response system and phone-in facility from six locations (Calcutta, Bombay, Chennai, Hyderabad, Ghaziabad and Delhi) in the country for teaching selected topics in Physics and Mathematics at the *secondary level* Each centre was provided with a TV monitor, two telephone lines and keypads linked to the computer for obtaining immediate feedback The TV lessons were telecast on the National and Regional Networks and were viewed in schools and homes.

In order to meet the present educational needs of the country we have to think of new experiments and creative innovations in media-use and media-mix, equally corresponding changes in the processes, curriculum development, teachers training, examination reform and development of supportive systems and community involvement at the grassroot level

The Indira Gandhi National Open University (IGNOU) established in 1985 transacts its curriculum through a multimedia instructional mode Recently IGNOU has offered several courses in teacher training. These include diploma programme in higher education, primary education and certificate programme in guidance and counselling for elementary school children. The self instructional print materials are supplemented by audio and video programmes. The media programmes are broadcast on regular TV channel and are also available in cassettes in the study centres

Every country in the world has realized the potential of educational television. In India the most dramatic impact of the National Satellite (INSAT) has been the rapid expansion of TV coverage through installation of more than 750 TV transmitters providing access to over 85 per cent of its population. The use of INSAT for educational broadcasting with about 100 hours of programmes per month to about 4000 schools and colleges has been further augmented China uses the satellite medium to provide 31 hours adult education programmes every day to 30 million people with 63,000 TVRO Earth stations and over 50,000 learning centres

INQUIRY

Efficient Questioning for Teacher Empowerment

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Questioning as a 'teaching device' makes significant contribution to the teaching-learning process. Whereas it is a handy tool for teacher empowerment, it also promotes student's learning through increased pupil teacher interactions. Besides being an indicator of teaching-learning approaches, questioning also provides answer to the issue of matching task to student's level particularly so at the elementary level

Questions and questioning is a way of life Questions are tools of inquiry while questioning is a technique of inquiring Questions are rooted in the science of ontogeny directed towards genesis of things, ideas, happening for better understanding of the field of interest or study. A question seeks answers to the science or theory of knowledge i e. epistemology A question by a teacher, a student, or a parent indicates the need of knowing the unknown.

In other words, one may say a question is a mode of inquiry to solicit the intended response or find answers to what is not known Questioning as a tool or device of teaching, connotes direct or indirect appraisal of what a person knows or does not know It attempts to challenge another person's faculty of mind and stimulates thinking by providing relevant stimuli. Fundamental questions relate to discovery of principles and aim at finding answers to the theory of knowledge for which we have to look to different sources like empiricism, rationalism, institutionalism.

Questioning refers to the technique of teaching-learning process which utilises the questions as tools of instruction and assessment to elicit intended responses Therefore, good questions without efficient questioning serve little purpose while efficient questioning without quality questions may jeopardise intended learning outcomes and lead to wrong inferences about student's learning In fact relationship between the questioner (teacher) and the respondent (learner) is established through questioning for effective interaction. The more relevant and higher quality the questions if are used by the teacher, the more useful purpose is served by getting valid responses from children A bad question puts both the questioner and the respondent on different wave lengths resulting in misinformation, irrelevant responses and misinterpretation Therefore, questioning and questions as technique and tool go together and are closely integrated when questioning is employed as a teaching device. Of all the teaching devices it is most usable and most frequently used teaching device.

Questioning for Successful Teaching

Though successful teaching puts a number of demands on the teachers yet the fact remains that a repertoire of diverse organisational strategies, teaching techniques grounded in clearly articulated objectives, mastery of the subject matter and knowledge of pupil learning are essential equipment of an effective teacher. The dominant theoretical mode of 1970s derived from the work of Jean Piaget provided not so much on theory of teaching as on theory of applied child development. In contrast Vygotskian model of 1980s highlighted that function of teaching is to accelerate development rather than merely keeping pace with it. He is intervener and focuses critical role of mediating between pupil and learning tasks. For this, emphasis of the constructionist learning paradigm is on the context of social interaction which takes place in the classroom. This envisages teacher-pupil, teacher-teacher, pupil-pupil and pupil-task interactions These intractions can be generated by talking, using materials, learning tasks, teaching-learning strategies, assessment of pupils, etc. both for instructional and assessment purposes

Literature on questioning comes from diverse fields like sociology, psychology, education, philosophy and linguistics, and comprises diverse mix of emphasis For some it is a matter of practice while for others it is an object of study Interactional nature of classroom discourse focusses on questioning as the most frequently used teaching device by teachers. Research too has shown that classroom interaction brings about measurable changes in students' growth Value of teacher's questions lies in the fact that is the basic unit of most classroom teaching. Apart from pedagogical function, questioning performs an important psychological function of motivating students to think critically and reflectively and in turn accelerate the learning process. In the context of large classes in India, use of questioning device in teaching learning strategies becomes all the more important for successful teaching.

Purpose, Scope and Potential

Questioning is the most natural and potential teaching device which every teacher can use effectively with some training in the art and science of questions. The power of questions lies in its quality and use at the right time, in the right context and for the right purpose. The most practical and easiest way to empower our teachers is to teach them, when and how to question efficiently in the class at various stages of a lesson For this the following guidelines would be useful·

i. Be clear about the purpose of questions. It could be to classify, diagnose, assess, review, etc.
ii. Be sure of the level at which you are putting the question to the class Higher order questions for lower primary classes may not yield intended results especially with weaker sections of students.
iii. Be cognizant of the intended outcome in framing the question.
iv Be careful that the wording of question is precise and unambigious.
v. Be sure that questions are addressed at the right time.
vi. See that immediate feedback about answers is provided to the students

Effectiveness of a question lies not only in its mode of administering but also to the context to which it yields intended or relevant response Following types of questions can be used during questioning:

a. Ancillary Questions

Questions seeking confirmation of learning
— Have you understood the concept of respiration?

Questions seeking approval of teacher's suggestion
— Should we proceed further to the next topic?

Questions inquiring about pupil's reaction or view
— Is it enough for today or would you like to continue?

Questions used as repeats for weaker students
— Could you now reproduce what Shri X has spoken.

These questions are neutral questions in the sense that they are not really the questions for use as a part of technique of questioning to promote learning but are auxilliary questions that facilitate switch over to the next learning episode or provide confirmatory evidence for the same.

b. Instructional Questions

These questions are used as a teaching device to initiate, develop or classify concepts, ideas, issues, problems, etc. They aid in teaching For example, a labelled diagram is drawn on the blackboard and questions like the following are asked to review the lesson.

— Which of the organ is concerned with movement of the animal?
— Which label indicates the outermost membrane?
— Which organ helps in respiration?

Likewise, any number of questions can be asked to develop and review the lesson.

c. Assessment Questions

Questions as a testing device is known well to all teachers As a measuring tool, a question can be used for assessment of student's learning. Similar type of questions can be posed during sectional recapitulation of instruction to get feedback about student's learning and effectiveness of teaching-learning strategy.

Use of questioning as a teaching device requires teachers to develop questioning attitude as well as questioning skills. In fact style of questioning is an indicator of teaching, learning approaches and the nature and quality of questions he uses in questioning reflects the cognitive demands, the teacher makes on the children. Researches in this area also confirm and elucidate the importance of teacher's questions in focussing and challenging learning tasks for effective teaching.

Student's questions are also a part of interactional strategy of teaching and learning During teaching students raise questions when they do not follow a particular example, concept or principle. But most of those questions are lower order questions seeking some additional information or reproduction of an explanation or exposition of the teacher It is seldom that they raise questions of higher order to seek answers involving new or unfamiliar situations. The reason is that teachers themselves put routine factual information questions which usually call for reproduction of what has been taught. Cognitive correspondence between teacher's questions and student's answers supports that higher cognitive questions serve to raise student's thinking vis-a-vis learning. If the teacher uses questions based on higher cognitive levels as a teaching device, a time comes when students start putting questions of higher order (application, analysis, evaluation) to the teacher thereby indicating their own thinking.

Context of Questioning

Since teacher's questions serve different purposes in different contexts it is important that questions are planned keeping in mind the purpose they are supposed to serve before they are addressed to the children. These questions could be directed to the whole class, a group of students or to individual students. In the context of classroom teaching questioning refers to the three stages, the *pre-instructional, instructional* and *post instructional stages.* At each of these stages, purpose and scope of question varies and hence focus of questioning will be different. It is illustrated below with reference to the three stages in a lesson.

a. Pre-instructional Phase

Readiness is basic to learning a new concept, idea, principle, etc. One way to test readiness is to assess pre-requisites considered necessary for students to benefit from instruction. For that the teacher through questioning can ascertain if the children have the pre-requisite knowledge and skills necessary for developing the lesson in hand. The purpose is to initiate the lesson properly. Pretesting through proper questioning is one technique of establishing the linkage between what is to be taught and what is already learnt. Thus questioning at this stage enables the teacher to assess, diagnose, and if needed apply correctives for proper placement of students, thereby empowering him to go ahead with the actual or developmental teaching planned for the day's lesson. What type of questions should be used for questioning at this stage of activities? Following types of questions are relevant to elicit the needed information

- Questions based on those facts, concepts or principles which they have learnt earlier and are basic to learning of new concepts to be taught
- Questions which focus on assessment of basic concepts or ideas rather than testing higher order abilities.
- Questions which help to find out the difficulties which they still face and need reteaching.

b. Instructional Phase

This is the development phase in which the new lesson is taught by organising various types of teaching-learning activities. Depending upon the purpose or intended outcomes of a particular episode, different type of questions can be made use of in the questioning. This may cover new knowledge, understandings, concepts and skills to be developed For this, questions relevant to the learning episodes have to be used. Depending upon the nature of content of teaching following types of questions can be taken advantage of.

- Questions to clarify concepts
- Questions to develop new concepts
- Questions for reinforcement of concepts
- Questions asked for citing examples of concepts
- Questions asked for students to establish cause and effect relationship
- Questions asked for students to draw inferences

c. Post-instructional Phase

Last phase is the post instructional phase which includes culminatory activities or tasks related to review, reinforcement and assessment purpose Questioning at this stage is directed towards revision of lesson, identification of difficult spot which need further attention, judging the instructional impact on student's achievement and providing immediate feedback to the learners. Following types of questions are usable at this stage:

- Questions used for summing up the lesson
- Questions used for revision of lessons
- Questions used for assessment of what is learnt by children
- Questions used for reinforcing the concepts learnt in the form of school assignment

For review purpose questions covering major content elements of the lesson are to be used and they reflect all levels of difficulty in terms of ascending order of complexity of the abilities tested. For assessment purpose questioning based on selected content elements testing all competencies implied in the unit objectives formulated earlier, may be included. In case of reinforcement of concepts, questions requiring practice of cognitive and psychomotor skills may be used and given as class assignments.

Questioning Skill

a. Pre-requisites

For efficient questioning through understanding of the questions to be used is a basic requirement. The teacher's questioning skill can never be perfected unless he/she is well versed with the form of a question and characteristics of a good question. In classroom teaching by and large it is the short answer questions which are more usable. Eassy type questions demanding long answers have little place as a teaching device. Knowledge of attributes of a good question is an important pre-requsite essential for questioning skill. How precise wording and simple language of the question is? How relevant is the question in a given context? Is it set at a reasonable difficulty level? Is it free from ambiguity of the task implied in it? It is assumed that the teacher is well conversant with these attributes of a good question.

b. Level of questioning

Since questioning can be resorted to at every phase of instruction it is neither necessary nor desirable to question all students using the same level of questions At pre-instructional phase comparatively easier level of questions testing fundamentals, are more profitable while during instructional phase teacher can make use of all levels of questions ranging from assessment of lower order abilities to the higher order abilities depending upon the content of teaching. At post-instructional phase questions of graded difficulty level covering all the content elements of the lesson and the abilities developed are more relevant. Proportion of lower order, middle order and higher order questions depends on the academic level of the class and the learning content However, level of questions should correspond to the level of teaching undertaken by the teacher

c. Technique of Questioning

Though it may seen quite unnecessary to describe how to put questions in a class because there is no hard and fast rule for it, yet the fact remains that certain questions bring back blank responses from students that may lead to wrong inference about teaching effectiveness. In a regular class there are three possibilities of questioning. It may be for seeking individual response to a question, group response or the class response Questions aimed at individual students are primarily for diagnosing learning difficulties if any and are addressed usually to the weaker section of the class, with the intention of reinforcing positive responses and for remedial purpose in case of wrong responses. Questions aimed at a group of students engaged in different learning tasks as in a project, help to identify problems of a group or strengths in carrying out the learning tasks within a given time frame. Questions aimed at the whole class have focus on general survey or overall impact of teaching which could be better assessed at review and evaluation phases of teaching besides classroom assignments

However, the questions must be addressed to the whole class. Never say, You Shri X tell me, Why do we . .? It creates unwanted anxiety and stress Do not ask difficult questions to weak students and easy questions to bright students. Provide opportunity especially to poor students to respond correctly For correct responses give immediate feedback for reinforcement of learning In case of wrong responses, do not rebuke but let another good student to supply correct answer which the weak student can reproduce thereafter.

Rewording and questioning with a modified version of the question, or splitting the question into two sub-questions may sometimes also help to elicit the expected responses from certain students Questioning is, therefore, not only to assess whether a student knows or not, but also to bring out the best of what he knows and help him know what he does not.

d. Managing Students' Questions

Following types of questions are usually asked by students:

— Questions seeking additional information from the teacher
— Questions seeking classification of certain points or issues
— Questions seeking confirmation of their responses
— Questions seeking rationale underlying

correct responses

- Questions challenging the teachers' contention or explanations
- Counter questions by students for elaboration of teachers' questions

It is quite obvious that all types of student's questions are focussed on learning more and more. The teacher has to encourage student's questions through his own questioning and encouraging students to put questions. This two-way interactional process of questioning by teachers and questions by students make teaching learning more interesting and effective. To make it a participatory process, student's questions could be responded to by other students in the class if encouraged right from the beginning

e. Mastering the Teaching

Mastery of knowledge of the subject or unit of teaching is the main pre-requisite so that there is no inadequacy of the content being taught. In addition the skill to frame relevant questions and their effective delivery is another requirement for mastering the questioning skill, proficiency of which one acquires through sustained practice of framing and using questions over a long time.

To Conclude

Whichever model of teaching is used teachers have no option for questioning in classroom. A teacher who has mastered the questioning skill is empowered with the most cogent device for successful teaching Questions generate maximum interaction among the children and between children and the teachers Depending upon the activities to be developed or assessed, higher or lower order questions can be used in questioning. Thinking questions requiring exercise of higher mental abilities and when continuously used by teachers in classroom, lead to better achievement of learners besides developing in them the ability to put higher order questions to the teachers. This shows their own growth. It may be stated that style of questioning is an indicator of teaching-learning approaches and the types of questions asked indicates the congnitive demands the teacher makes on the students Thus, questioning provides the answer to the issue of matching task to the pupil's level

APPROACH

Autotelic Learning

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Autotelic learning is an attempt to provide greater freedom for students to determine the goals and methods of learning. It views teachers and students as partners, each capable of taking sound need-based decisions about their education. Autotelic learning presupposes an autotelic responsive environment which permits the learners to explore freely in the environment. It informs the learner immediately about the consequences of his actions, where events happen within the environment at a rate determined by the learner; it permits the learner to make full use of his capacity for discovering relations of various kinds, and its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural or social world.

Autotelic learning can be used for all children, including the children with disabilities. It includes both cooperative learning and individual learning approaches. Autotelic learning works on 12 principles, which makes learning joyful and effective.

Research studies have been conducted on the effectiveness of different learning approaches in the last few decades, and the results are mixed. The learning approaches which have received the attention of the researchers include individual learning, cooperative learning, peer tutoring, collaborative learning, mastery learning and flexible learning. In these learning approaches the goals are set by the teachers and the students are expected to achieve them. Thus, the students have no choice with regard to determining the goals and methods of learning and the teacher decides what to learn and how. The students rarely get an opportunity for creativity and analytical thinking. If the learning is to be made joyful and effective, the students must be encouraged for creative and analytical thinking Autotelic learning approach is an attempt to ensure the involvement of all students in determining the goals and methods of learning.

Eraut (1985) refers to Moore's autotelic responsive environment in which students are encouraged to explore the environment freely and learning goals and methods are determined by the students themselves In Greek "auto" means self and "telic" means purpose Thus, autotelic learning means where learning goals and methods are determined by the students themselves, or where students are allowed to make decisions what to learn and how.

The term "autotelic responsive environment" was first used by Moore in 1968 to describe his computer-controlled talking typewriter. He defines an autotelic activity as something one engages in for its own sake and not for obtaining some external reward (an explicitly anti-Skinnerian concept), and a responsive environment is one which satisfies the following conditions·

— it permits the learner to explore freely
— it informs the learner immediately about the consequences of his actions
— it is self-pacing, i.e., events happen within the environment at a rate determined by the learner
— it permits the learner to make full use of his capacity for discovering relations of various kinds
— its structure is such that the learner is likely to make series of interconnected discoveries about the physical, cultural, or social world (The International Encyclopedia of Education, 1985).

Later, Moore (1969) expanded his ideas still further when he added a "perspectives principle" to the autotelic principle The perspectives principle, which Moore derived from the symbolic interactionist theory of *Mead* states that learners should have a chance to take at least four roles in such learning situations

— Agent—they must create a goal
— Patient—achieve a goal defined for them by someone else.
— Significant other—advise another learner.
— Generalized other—become part of an audience for another learner's presentation

Autotelic learning approach asserts that all children can contribute to make their education more relevant and more meaningful for themselves. It does not exclude necessary support to children with special needs in the form of facilities and special teachers While students become partners in determining goals and methods of learning, they will develop positive self-concept and positive attitude to learning Autotelic learning has a place for both cooperative learning and individual learning.

The principles of autotelic learning have been described below·

1 *Free Exploration.* This principle allows the students for free exploration of teaching aids and environment which play an important role in the process of learning. Free exploration of teaching aids and environment is possible through different senses, such as vision, touch, hearing, etc. whereas the sighted students heavily rely on the sense of vision for their learning, the students with total loss of vision depend on the senses of hearing, touch and smell for learning Although some students may have residual vision, they may not be able to make full use of it for the process of learning. Therefore, they have to make

use of different senses to receive information for learning.

All students, including the visually impaired, will benefit from the free exploration of tactile teaching aids and the environment. While the sighted students will learn primarily through the use of vision, they can develop the potentialities of other senses by using them. On the other hand, visually impaired students have to rely on touch, hearing and smell, etc.

2. *Active Learning* In traditional methods of teaching the role of students is minimal and the teacher dominates the whole process of learning. The students are expected to do what the teacher asks them to do. Thus, the role of students in traditional classrooms is passive. On the contrary, the students play an active role in autotelic learning. Students are involved in all learning activities and their participation is ensured by encouraging them to take part in discussions in the classroom. The answers to the questions come from the students themselves as they are involved in different activities which lead to joyful learning. It will also help students to develop positive self-concept, which will lead to effective learning.

3. *Individual Learning* Research studies have been conducted on cooperative learning and individual learning in the last few decades. The results support the conclusion that cooperative learning has been found to be superior to that of the individual learning. In special education, however, both individual learning and cooperative learning play important roles. Autotelic learning has a place for both—cooperative learning and individual learning. There may be occasions when some students may need individual attention and they may not be able to keep pace with other students In such situations, a student who has problems, needs individual help. Autotelic learning takes care of students who have individual learning needs. If individual students encounter problems in learning, autotelic learning takes care of them. The teacher provides feedback to individual students in order to help them to achieve the goals of learning set by the students themselves.

4. *Discovering relationships of various kinds*: Learners will be encouraged to make full use of their capacities for discovering relationships of various kinds These relationships can be either conceptual or physical. The principles of free exploration and active learning in autotelic approach will enable all students, including the visually impaired, to discover relationships of various kinds There will be far-reaching implications of this principle for the education of the visually impaired learners who have to depend on other senses to discover relationships between objects and between concepts.

5. *Integrated experience of physical, cultural and social environments*: It is very difficult to define these three terms, i e., physical environment, cultural environment and social environment. However, each of them may be discussed here in short. By physical environment is meant everything that exists in physical form in and around the school and that which can be helpful in promoting the learning of students. In this sense, learning materials, building where classrooms are situated

and the surroundings, etc. form the physical environment. In cultural environment learning and intellectual developments of the students are promoted. In social environment interaction among the students is encouraged and learning atmosphere is warm and friendly. Learners will be provided integrated experience in terms of physical, cultural, and social environments because isolation of any of these three cannot lead to effective learning.

6. *Learners' four roles:* In autotelic learning, learners should have a chance to take at least four roles in each learning situation which will promote interaction among the students When the students create a goal for learning, they will be agent; but when they achieve the goal set by someone else, they will be patient. When they advise another learner, it is called significant other; but when the students become part of the audience for another learner's presentation, they are generalized other In this way, the four roles in autotelic learning will promote interaction among the students. Such interactions are very important for all students, including the visually impaired, because they will learn to exchange their ideas and this will make their learning more effective.

7. *Demonstration, feedback and reinforcement.* The students may differ in their learning needs and learning styles. Some learners may prefer demonstration of visual aids whereas others may depend on hearing and touch for learning different concepts. In autotelic learning learners will be given demonstration, practice, feedback and reinforcement by the teacher during the learning process (Ainscow, 1994). Demonstration of pictures for explaining concepts of geometry, for example, can benefit the general students and the hearing impaired students; but the visually impaired students need teaching aids and models which could be touched and understood to learn different concepts of geometry. Three dimensional models and tactile teaching aids can be very useful for the visually impaired students in understanding certain concepts Demonstration of tactile teaching aids, such as shapes of triangle, rectangle, circle, etc. will not only benefit the visually impaired, but also the sighted students. Examples from the available objects in the environment will be very useful to the learning of the visually impaired students.

The principle of demonstration, feedback, practice and reinforcement will equally work for all students, and will significantly contribute to the improvement of learning of all students. However, visually impaired students may need more practice, sometimes more feedback and more reinforcement than the sighted students

8. *Continuous Evaluation:* In autotelic learning student's learning will be evaluated after completion of each unit. Through continuous evaluation the students will be able to identify their problems in learning and they will make greater effort to find solutions to the problems (Ainscow, 1994) On the other hand, continuous evaluation gives an opportunity to the teacher to know how much the students have learnt and where students need feedback. This principle will be very useful in improving the quality of learning in classrooms in regular and special schools. The following explanation will clarify the concept of

continuous evaluation. Take the example of geometry syllabus, which may be divided into different units and the students will be evaluated after completion of each unit. For instance, the first unit which may include point, line segment, line and ray may be taught to the students and the test may be given to the students to evaluate their learning of these concepts. In all unit tests, both practical and theoretical aspects of learning may be included.

9. *Support* Efforts will be made to ensure that students support each other in learning, and the teacher also facilitates the learning of each individual child (Ainscow, 1994). Support among the students will promote cooperation in the classroom. This principle of autotelic learning will be of immense use to the sighted as well as to the visually impaired students. Though the role of the teacher will be minimal, he/she will help individual students to understand certain concepts if students' support does not work.

10 *Concrete learning experiences:* Lectures and discussions are not sufficient for effective learning in the classroom. The students must be provided, as far as possible, concrete learning experiences of different objects. In autotelic approach, concrete learning experiences will be provided to students, if possible, through real objects. If it is not possible for any reason, these experiences will be provided through tactile teaching aids. Although these experiences are important for all learners, visually impaired students must be provided concrete learning experiences in order to make their learning more effective and more meaningful.

11 *Unifying Experiences:* Vision provides a complete picture of the objects in question. However, in most cases, visually impaired learners are provided experiences in part through verbal explanations. Autotelic learning holds, as does Lowenfeld (1973), that visually impaired learners must be provided unifying experiences in order to give them comprehensive knowledge of the object. Unifying experiences of objects can be obtained by using different senses. These senses will provide experiences of different qualities of the objects. Such experiences will be very useful for all children.

12. *Learning by Doing:* Students will be encouraged to learn concepts through activity method. Autotelic learning emphasizes that all learners, particularly the visually impaired, must be encouraged to learn different concepts by the method of "learning by doing". This method will instill confidence among the visually impaired learners and their performance will improve through this method.

FOCUS

Medium of Instruction in NER of India

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Language contributes to much wastage and stagnation in the North Eastern Region of India. Due to innumerable tribal dialects the task of preparing textbooks in local dialects is difficult. The question of a uniform language for the tribes has become a serious problem. This issue is studied and outlined by the author.

The vast proportion of tribal population of the North East Region (NER) of India and their concentration in certain hilly regions has created a difficult situation in regard to provision of educational facilities A study of the efforts made by the British government revealed that as they proceeded to form a policy of isolation and status-quo, the tribals had to remain at the mercy of petty official and nothing positive was achieved by the way of rehabilitation and development. Consequently, they become the poorest of the poor and remained as the most backward group in the society No systematic effort was made to educate the large population of this backward community at the early part of the British rule.

Immediately after independence and integration of the princely states, the National government lost no time to realise the importance of devoting special attention towards its vast backward population particularly to the NER of India. The emphasis on educational progress is fully justified because without spread of education and consequent enlightment, the tribal people cannot fully realise their own status. The progress of education and literacy hold a very important place in any programme of amelioration of the tribal people. One of the most important and remarkable problems for development of education in the NER of India is the medium of instruction at the primary stages of school education among the innumerable tribal dialects and languages.

Medium of Instruction

It is a well known fact that Article 350 provided that "It shall be the endeavour of every state and of every local authority within the state to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups..." One of the main reasons for the slow progress of the students of the NER of India specially in tribal areas, is that the medium of instruction is other than the mother-tongue of students. Specially at the primary stages the tribal children are not acquainted with other languages/dialect except their own. So they face a lot of difficulty in understanding their lessons. It is to be noted that at the primary stage, the medium of instruction should be the mother-tongue of the children.

It is noteworthy that more than 80 per cent of the population of (i) Meghalaya (ii) Nagaland (iii) Mizoram and (iv) Arunachal Pradesh are tribals. There are 23 recognised major tribes in Assam, 12 tribes in Arunachal Pradesh, 29 tribes in Manipur, 5 tribes in Nagaland, 19 tribes in Tripura, 14 tribes in Meghalaya and 14 tribes in Mizoram. Again there are also 16 Scheduled Castes in Arunachal Pradesh, 7 Scheduled Castes in Manipur, 16 Scheduled Castes in Meghalaya, 32 Scheduled Castes in Tripura and 16 Scheduled Castes in Mizoram respectively in NER of India, speaking different dialects.[1] Some state governments in this region have expressed their inability to implement the recommendations of Education Commission (1964-66) and National Policy on Education (1986), that the medium of instruction of pupils should be mother-tongue at the primary stage, on two grounds:

— The tribal dialects are innumerable, and

— There is a lot of difficulty to prepare textbook in the local dialects

The prevailing medium of instruction at the primary stages of education in NER, under the provision of Article 350 as on January 1,1993 is as follows.[2]

ARUNACHAL PRADESH	
(i) Primary Stage	English and Hindi
(ii) Upper Primary Stage :	English, Hindi, Assamese and Sanskrit is used as a third language.
ASSAM	
(i) Primary stage	
(ii) Upper Primary Stage ·	Assamese, Bengali, Hindi, English and Bodo
MANIPUR	
(i) Primary Stage ,	Major Indian Laguages (MIL) generally Hindi, Bengali, Manipuri and 5 recognised Tribal dilects
(ii) Upper Primary Stage	MIL generally Hindi, Bengali, Manipuri, and English.
MEGHALAYA	
(i) Primary Stage	Mother tongue, namely Khasi and Garo. In other schools, Assamese, Bengali, Hindi and Nepali are also adopted as the medium of instruction
(ii) Upper Primary stage :	English in all schools except in some schools where Bengali, Hindi, Assamese and Nepali

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[1] Tyagi, P.N . "Education For All: A Graphic Presentation" NIEPA, New Delhi, 1991, pp 16-18.

[2] Govt. of India "Selected Information on School Education in India 1992-93", MHRD, New Delhi 1993, pp. 8-11.

	are used as medium of instruction.
MIZORAM	
(i) Primary Stage/ Upper Primary Stage.	Mother tongue namely Mizo, Nepali, Bengali as the the case may be.
NAGALAND	
(i) Primary Stage .	Local dialects and Enlish
(ii) Upper Primary Stage·	Local dialects namely AO, Konayak, Angami, Sema, Lotha and Enlish
TRIPURA	
(i) Primary Stage	Bengali, English Kokborak, Hindi and Lusai
(ii) Upper Primary Stage.:	Bengali, English, Provision for Hindi, Sanskrit, Pali, Arabic are adopted as the optional

Even though there are a large number of tribal dialects in NER, all the states in this region gradually take up the initiative to produce textbooks for the primary stages in Roman script of the major tribal dialects recognised by the respective state governments

The medium of instruction in NER is very complicated and this is a factor for wastage and stagnation. As for example, there are 29 dialects in Manipur as stated earlier and Manipuri is used as the medium of instruction upto secondary level. In the hill areas wastage and stagnation are caused by students whose mother-tongue is not Manipuri. As a remedial measure government has introduced a policy from 1980 onwards to adopt medium of instruction and examination for Classes I-V in the schools of Manipur in any of the following.

(a) Manipuri
(b) Hindi
(c) Tangkhul
(d) Paite
(e) Lushai
(f) Hmar
(g) Thadou/Kuki
(h) Any one of modern Indian laguages as approved by the Government of Manipur from time to time.

The pupils receiving primary education through any of the recognised dialects viz, Tangkhul, Lushai, Paite, Hmar and Thadou/Kuki are to learn regional language (Manipuri) as a separate language subject, from Class III-V, so that they may not find any difficulty at the time of switching over to the regional language at the end of Class V. Those pupils whose mother tongue is neither regional language nor any of the recognised dialects have to opt either Manipuri or any one of the recognised dialects as their medium of instruction and examination.

Languages Taught

The following languages are taught at the primary stages of school education at present in Manipur.

(a) Classes (I-II)

Only one language is taught, hence mother tongue of the children is to be taught. However, out of the 29 dialects spoken by the tribal children only 5 dialects viz., Lusai, Hmar, Paite, Tangkhul and Thadou/Kuki are recognised and hence the children speaking these dialects should be given the opportunity of learning through their dialects in Classes I and II But the children speaking the remaining 24 dialects will have to opt either one of the recognised 5 dialects or Manipuri (Meiteilon).

(b) Classes (III-V)

Three languages are taught in the following pattern at this school stage of education:

(i) Mother-tongue as the first language
(ii) English as the second language
(iii) Hindi as the third language

The tribal children speaking the 24 dialects which are not yet recognised by the government will have to opt either one of the recognised dialects or Manipuri (Meiteilon) Those who offer either one of the recognised dialects will have to learn Elementary Manipuri as a subject, carrying 50 marks so that they may be conversant with this language.

(c) Classes (VI-VIII)

Three languages are taught at the upper primary stage of school education·

(i) Manipuri (Elementary Manipuri for Scheduled Tribes)
(ii) English as second language
(iii) Hindi as third language.

In addition to these subjects, the opportunity for learning of Meitei Mayek (Old Manipuri Script) in Class VI is provided for those desirous of learning the language.

Problem of Language

The language problem is very controversial issue in NER It is necessary to pay special attention to the education of children from the backward classes which include the Scheduled Tribes, *denotified* communities and a few nomadic and semi-nomedic groups.[3] Manipur state has a language and script of its own, which is in the Kuki/Chin branch of the Tibeto-Burmese family of languages Assam already had its own language and script. In NER, only two states have their own script and remaining 5 states have no script of their own and the missionaries introduced Roman script in their languages Thus, one of the major problems in tribal education is that of language and script. As they have no written language of their own and teaching of literacy subjects in a different language have no appeal on them. Therefore, the question of an uniform language for the tribes of NER is a serious problem

At present, the tribes in NER of India, are educated through different regional languages. The tribals have been demanding for imparting primary education through the medium of their own languages and dialects.

NER Languages in the Eighth Schedule

In NER, only Assamese language was included in the Eighth Schedule, when the country's constitution was drafted and other languages in this region were neglected. At present there are two languages· (i) Assamese and (ii) Manipuri in the Eighth Schedule in NER. The demand for recognition of Manipuri as one of the national languages by including it in the Eighth Schedule of the Constitution is a long-standing one Being a native state, Manipuri was represented on the constituent assembly when the country's constitution was drafted and the case of Manipuri with an ancient script and rich literature for inclusion in the Eighth Schedule went by default.

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[3] Govt. of India: "Report of Education Commission 1964-66", NCERT, New Delhi, 1970, p. 242

20 August 1992 is the 'red letter day' in the history of Manipuri language (Meiteilon) and Manipur state by smooth passage of Constitution (71 Amendment) Bill 1992, in both Houses of Parliament for inclusion of Manipuri language in the Eighth Schedule of Indian Constitution, along with Konkani and Nepali [4] Introducing the Bill in the Parliament, the Union Home Minister Shri S.B. Chavan felt that the Government was taking a step forward in fulfilling the aspirations of the Manipuri, Konkani and Nepalee In both the Lok Sabha as well as the Rajya Sabha, the Bill was passed without any opposition. In the Lok Sabha, all the 343 members supported the Bill, while in the Upper House, it was passed without a discussion and all the 130 members voted in favour. Manipuri is the first language in Tibeto-Burman group to be included in the Eighth Schedule of the constitution and inclusion would help in bringing the people of Manipur and particularly the youth, to the national mainstream and would strengthen national integration. Thus, there are two languages (i) Assamese and (ii) Manipuri in the Eighth Schedule in the NER of India with effect from 20 August 1992.

Problem of Textbooks

Preparation of textbooks for the major languages like Assamese and Manipuri is not difficult upto University level. But it is difficult to prepare textbooks for the tribal children specially at the primary stages in the NER. The textbooks which have been prescribed for the tribal children of a particular grade are either too difficult or defective in the manner in which the subject matter is presented So due attention should be paid by the authority for preparing textbooks for the tribal students of different age level. It is also necessary that the common textbooks meant for general students of a state should include lessons depicting the life of the tribals, their folksongs, and the life of important personalities. This will enable both non-tribal and the tribal people to understand each other better.

Medium of Instruction

It is the language and medium of instruction at the primary stages, which are responsible for the retardation of progress of education in the NER. The medium of instruction at the primary stage is a controversial issue since the beginning of formal education in the NER. The medium of instruction at the primary stage of education is other than the mother-tongue of the students for the unrecognised tribal dialects throughout the region. The medium of instruction at the primary stage of education in the NER is as follows:

(a) Arunachal Pradesh· English, Hindi, Assamese and Sanskrit.
(b) Assam: Assamese, Bengali, Hindi, English and Bodo.
(c) Manipur. Manipuri, Hindi, Bengali

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[4] **Sarkar, Ed: "The Telegraph", Printed and Published, Anand Bazar Patrika, Calcutta, 21st August 1992, p. 1.**

and 5 recognised Tribal dialects: Hmar, Kuki, Paite, Lushai and Tangkhul

(d) Meghalaya: Khasi, Garo, Assamese, Bengali, Hindi and Nepali

(e) Mizoram: Bengali, Hindi, Mizo and Nepali.

(f) Nagaland: Ao, Konayak, Angami, Sema, Lotha and English.

(g) Tripura: Bengali, English, Kokborak, Lusai, Hindi, Sanskrit, Pali and Arabic

Teaching of Hindi

Teaching of Hindi is compulsory at the primary stage in Arunachal Pradesh, Assam, Manipur, Meghalaya and Nagaland in the NER. It is not compulsory at the primary stage but made optional at the upper primary stage in Tripura. In Mizoram, there is no provision for teaching of Hindi at the primary and upper primary stages as the state government does not enforce it as a compulsory/optional subject.

Teaching of English

Teaching of English at the primary stage of school education is compulsory throughout the NER of India. Teaching of English is made compulsory from Class I in Arunachal Pradesh (Classes I-IX), Meghalaya (Classes I-X), Mizoram (Classes I-X) and Nagaland (pre-primary to X), whereas it has been made compulsory from Class III in Manipuri (Classes III-XII) and Tripura (Classes III-XII). Teaching of English at the pre-primary stage is compulsory in private schools, whereas it is optional in government schools in Nagaland.

Public Examination

There are no public examinations at the primary education in Assam, Manipur and Tripura. There are two public examinations: (i) Primary Scholarship Examination (not compulsory for primary schools attached to M.E but it is compulsory for primary schools after Class IV and normally only the selected students) (ii) Middle School Scholarship Examination (not compulsory for middle schools attached to high school, but for middle schools the examination is compulsory after Class VI and normally only the selected students) in Meghalaya and which is conducted by the Meghalaya Board of School Education, Meghalaya, Shillong. There are two compulsory public examinations at the primary stages in Arunachal Pradesh at the end of Class V (primary school examination) and Class VIII (middle school examination) and these examinations are conducted by the Directorate of Public Instruction (DPI), Government of Arunachal Pradesh, Naharlagun.

STUDY

Learning Achievement through SOPT

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The professional development of primary teachers is a matter of concern to improve the quality of school education. Continuous efforts have been made to improve the quality of primary teacher education programme. The National Policy on Education (1986) envisaged Centrally-sponsored scheme for teacher education. The District Institutes of Education and Training (DIET) have been established throughout the country to improve the quality of primary education substantially through pre-service and in-service teacher education programme. This is an intervention research study of 183 primary teachers of Dehradun district and 142 teachers of Haridwar district provided under SOPT.

THE research studies have revealed that the achievement of primary school children in language and mathematics was not upto the expectation (Kulkarni, 1970, Dave, 1988, Shukla et al, 1994, Gupta 1995). The mastery of content in language and mathematics among primary school teachers was also below expectation (Gupta, 1996). The performance of the teachers in the classrooms, therefore needs to be strengthened. The achievement of minimum essential levels of learning by all children without equipping the teachers with the competencies is an elusive goal. The knowledge and skill of teachers can be updated by inservice education only.

Several agencies have been involved in the inservice education of teachers. At the national level, National Council of Educational Research and Training (NCERT) is designing and implementing inservice education programme for teachers At the state level, State Council of Educational Research and Training (SCERT) supports teacher education programme. Various models of inservice education are in vogue in the country The institutional based inservice education programmes are being organised by NCERT, SCERT, NIEPA, DIETs, etc. The non governmental organisations also actually participate, support and organise inservice education programme of teachers. Eklavya and Lokjumbish are some of the agencies engaged in the task Experiments have also been conducted to provide training to teachers through the distance mode. Teleconferencing has demonstrated its efficacy for training of teachers The approach used one way video and two way audio technology. Agencies involved in the experiment were Indira Gandhi National Open University (IGNOU), Indian Space Research Organisation (ISRO) and National Council of Educational Research and Training (NCERT)

The NCERT designed a Programme of Mass Orientation for School Teachers (PMOST) to reach five lakh teachers each year The programme was highly structured. The collaboration of different state and central agencies was sought to make the programme a success (NCERT 1988) Various research studies conducted to evaluate the programme revealed its success (Bhattacharjee, 1990; Dorasami, 1989; Grewal, 1990; Ramdass, 1990; Sachchidanand, 1991, Sen, 1989, Singh 1988).

The effectiveness of these training programmes has been assessed in different ways. However, the results in terms of the achievement of the teachers and efficacy of the programme have not been studied The evaluation of inservice education programme is problematic. Though various inservice education strategies might have improved the knowledge of the teachers, the question that remains often unanswered is regarding the gain in knowledge of primary school teachers as a result of training.

Special Orientation Programme for Primary Teachers (SOPT) is a Centrally sponsored scheme of the Ministry of Human Resource Development, Government of India NCERT has been entrusted with the responsibility for its planning, programming, organisation, conduct and monitoring besides providing academic input The present study was undertaken to determine the achievement of teachers after an inservice education intervention.

Objectives. After reviewing the related research literature the following objectives were formulated.

- To study the efficacy of the intervention strategy designed for SOPT
- To study the achievement of primary teachers before and after the intervention
- To study the achievement of primary teachers in the emerging concerns of primary education before and after the intervention.
- To study the achievement of primary teachers in the content and transaction approaches before and after the intervention

Hypotheses: The following hypotheses are formulated for the study

- The mean achievement of primary teachers will improve as a result of intervention provided under SOPT
- The mean achievement of primary teachers in the emerging concerns of primary education will improve as a result of intervention provided under SOPT
- The mean achievement of primary teachers in the content and transaction

approaches will improve as a result of intervention provided under SOPT.

Delimitations: The study was subjected to the following delimitations:

- The study was confined to the primary teachers of Dehradun and Haridwar districts of Uttar Pradesh who attended SOPT at the DIETs
- The sample size of the study was limited. The achievement scores of only those primary teachers were used in the analyses who were present at both the testing sessions
- The districts for the study was selected on the recommendation of the state.
- The achievement of the primary teachers was measured by the Academic Awareness Questionnaire (AAQ).

Research design: The quasi-experimental design was selected for the study. Single group pre-test—post-test design was found most suitable. The experimental design was simple to operate and adapted to the classroom use. The subjects were given pretest on the first day of the SOPT. The treatment was provided for seven days. The subjects were again tested on the last day to determine the change in the achievement score. The difference between initial result and the final result could be attributed to the experimental factors.

Sample: One hundred and eighty three primary teachers of Dehradun district and one hundred forty two primary teachers of Haridwar District comprised the sample. These primary teachers attended the SOPT in continuous cycles at DIETs located in two districts.

Tool: The measurement of the achievement of the primary teachers was most important for the study. All the available tools were reviewed. The existing tools did not cover the entire package of the training. The adequacy of the coverage of the content was especially important for the test that measured outcome of the training. Therefore, a new tool was constructed by the author and Rajendra Dixit. The achievement test was titled as AAQ. The AAQ comprised of multiple choice objective type questions. Each question contained a stem and four choices. The AAQ was reviewed by the experts drawn from the NCERT for the face validity and content validity. The reliability of the AAQ was determined by the test-retest method. The AAQ comprised of forty test items finally.

Intervention Strategies: Special intervention programme based on the concerns incorporated in the National Policy on Education, 1986, revised in 1992 was designed for the training of primary teachers. The basic focus was on bringing about a qualitative change in the teacher training programmes The apex institution possessed the rich experience of PMOST. The emerging concerns for primary stage of education was delineated and SOPT was planned.

A self instructional package (1994) was specially designed for SOPT. The package contained modules for creating awareness among primary teachers in the emerging areas of concern for universalisation of primary education and content and methodology for the transaction of curricular subjects. The content of curricular areas formed the base of methodology using the Operation Blackboard (OB) material supplied to primary schools under Centrally Sponsored Scheme The modules were written in the interactive style. The self instructional package was activity based and provided exemplars on various situations drawn from the subject areas The problem of a teaching unit of curricular area was highlighted by illustrating the use of OB material. The package was used as training material.

The support material was also designed for SOPT. A training manual (1995) with explanatory notes was provided for the use of resource persons. Educational Television (ETV) package contained video films and audio cassettes and user's guide. ETV support programmes were identified. The Central Institute of Educational Technology (CIET) designed and developed special programmes on the thirteen areas covering main items of the self Instructional Package. The DIETs were equipped with essential support material for organising training programme. The support material included self instructional package, training manual, ETV support material including video cassettes, OB kits and additional print material.

The SOPT was implemented by the DIET. The training in the intervention strategies for the resource persons who were drawn from DIETs was organised by the state level key persons. The key persons were provided training by master trainers Master trainers were drawn from the constituent units of the NCERT. Thus a three tier system of orientation programme was designed by the implementing Department of Teacher Education and Extention of NCERT.

The rigorous training programme of five days duration was organised by the Department of Teacher Education and Extention at the NIE and the RIEs. The resource persons were oriented in the same way by the key persons as they were expected to perform in the actual orientation programme. The resource persons were provided special orientation programme for seven days. Training schedule of the resource persons and primary school teachers was the same It was envisaged that the success of the SOPT depended on the training of the resource persons. Therefore, adequate steps were taken to monitor and supervise the quality of the training of the resource faculty.

Thus the primary teachers were oriented at the DIET in a camp mode. The participants were supplied the Self Instructional Package on the very first day The intervention under SOPT was provided for seven days.

Procedure· The AAQ was administered in a classroom setting of a DIET. Rapport was established with the primary teachers who came to attend the SOPT programme. The purpose of the study was made clear to the subjects. The subjects were taken into confidence. They were explained that this was not an examination. The achievement scores would be used for research purpose only

Statistical Techniques Used: The mean, standard deviation and coefficient of correlation were calculated for the achievement scores. The significance of the difference between means for the pre-test and post-test achievement scores was determined by using 't' test

Results and Discussion

The study was undertaken to examine the efficacy of the inservice education programme and to test the hypotheses formulated.

The result of the study is presented in Table 1. The table reveals that the mean achievement scores of primary teachers were 15 61 and 17.20 in pre-test and post-test respectively in Dehradun district The mean achievement score improved from pre-test to post-test in both Dehradun and Haridwar districts. In order to test hypothesis 1, a null hypothesis was formulated that there existed no difference in the mean achievement of primary teachers in the pre-test and post-test. A comparison of the mean of pre-test and post-test scores of primary teachers of Dehradun district gave 't' value as 9.77 which is significant at 0.01 level. This shows that the null hypothesis was rejected The research hypothesis 1 was retained for Dehradun district. The result presented in Table 1 indicates that the obtained 't' value 6 53 was also significant at 0.01 level for Haridwar district. Thus the formulated research hypothesis was also retained for Haridwar district. The mean of achievement scores of post-test was higher than the mean of achievement scores of pre-test in both the districts. The gain in the mean achievement score might be attributed to intervention strategies There existed a high positive correlation between pre-test and post-test score. The results presented above established the efficacy of inservice education programme under SOPT.

Table 1. Achievement of primary teachers

S No	District	N	Pre-test		Post-test		r	t
			Mean	S D	Mean	S.D		
1	Dehradun	183	15.61 (39.02)	4 48	17.20 (43 00)	3 92	0 869	9 77*
2.	Haridwar	142	13 27 (33 22)	3.63	15.25 (38 13)	3 70	0 493	6 53*

Figures in parentheses represent percentage *= Significant at 01 level

The mean achievement scores were converted into percentage. In Dehradun district, the mean achievement of pre-test scores was 39.02 per cent while the mean achievement of post-test scores was 43 00 per cent. The mean of achievement scores of primary teachers was not adequate and satisfactory The inservice education though improved the performance of the primary teachers statistically significant but in terms of percentage the achievement was not according to the standard envisaged in Minimum Levels of Learning (NCERT, 1991). Teachers were not able to achieve the mastery level of learning

The total achievement of primary teachers was bifurcated in two scores The achievement scores of the items related with the emerging concerns of primary education were analysed The result of the analysis is presented in Table 2. The achievement scores of the items based on the content and transaction approaches were treated statistically. The result is given in Table 3.

Table 2: Achievement of primary teachers in the emerging concerns of primary education

S.No.	*District*	*N*	*Pre-test*		*Post-test*		*r*	*t*
			Mean	*S.D.*	*Mean*	*S D*		
1	Dehradun	183	6.35 (52 91)	2.26	7 36 (61 33)	1.95	0.844	12 16*
2.	Haridwar	142	5.35 (44 58)	1.90	6 39 (53 25)	1.71	0 708	9 45*

Figures in parentheses represent percentage *= Significant at 01 level

A glance at Table 2 reveals that the means of the achievement scores in the emerging concerns in primary education were 6.35 and 7.36 in pre-test and post-test respectively for the primary teachers of Dehradun district. The null hypothesis was formulated. The 't' value was calculated to compare the means of pre-test and post-test scores The obtained 't' value 12.16 was significant at 0 01 level The null hypothesis was therefore, rejected The research hypothesis 2, the intervention strategy would improve the achievement of the primary teachers in the emerging concerns of primary education, was retained for Dehradun district The results of Haridwar district were also the same.

Table 3 shows that the mean achievement score of primary teachers of Dehradun district in pre-test and post-test was 9 26 and 9 85 respectively. The mean achievement in term of percentage was 33 07. As

Table 3. Achievement of primary teachers in the content and transaction

S No	*District*	*N*	*Pre-test*		*Post-test*		*r*	*t*
			Mean	*S D*	*Mean*	*S D.*		
1	Dehradun	183	9.26 (33 07)	1 86	9.85 (35 18)	1.97	0 693	5 56*
2.	Haridwar	142	7.94 (28 36)	2 29	8 87 (31.68)	2.18	0 442	4 89*

Figures in parentheses represent percentage += Significant at 01 level per the available norms of examination 33 per cent is the pass score. Therefore primary teachers of Dehradun district were able to achieve only pass score in the pre-test The mean achievement score improved to 35.18 per cent due to intervention provided under SOPT. The coefficient of correlation between pre-test and post-test scores was 0 693 which was significant at 0 01 level This shows that the achievement scores of pretest and post-test were positively correlated.

The mean achievement scores of primary teachers of Haridwar district in pre-test and post-test was 7.94 and 8.87 respectively. Though mean achievement score improved from pre-test to post-test, these were below 33 per cent. The mean of achievement scores were alarmingly low. MLL strategy envisaged that 80 per cent children should master 80 per cent prescribed learning levels. The teachers were not able to reach near the expected level.

In order to test the hypothesis 3 null hypothesis was formulated. It stated that there existed no significant difference in the mean achievement in the content and transaction approaches of pre-test and post-test scores. The means were compared for the difference

The calculated 't' value 5.56 was significant at 0.01 level of confidence for the teachers of Dehradun District. The null hypothesis was rejected. The research hypothesis was retained. Similar result is visible for Haridwar District

From the above discussion it may be concluded that:

— the Special Orientation Programme for Primary School Teachers was effective. The efficacy of the programme was established.

— the inservice education programme—SOPT improved the achievement of primary teachers markedly due to intervention provided

— the knowledge of teachers in the emerging concerns of primary education improved significantly as demonstrated by the achievement scores.

— the achievement of primary teachers also improved in content and transaction approaches due to the interventions provided under SOPT.

— the mean achievement score of primary teachers expressed in per cent was not near the mastery level. The study confirmed the findings of earlier research study (Gupta, 1996)

Implications

The study has significant implications for educational planners, administrators, curriculum workers, teacher educators and primary teachers. The institutions working at national and state level are expected to plan, organise, conduct and monitor inservice education programmes like SOPT.

'No people can rise above the level of its teachers,' this includes the achievement also (NPE, 1986). The achievement of primary teachers is a matter of serious nature which requires the attention of the nation. National Council for Teacher Education (NCTE), a statutory body set up on 17 August 1995 for maintaining the quality, needs to initiate steps for the same.

The teachers of the state managed schools are to be provided training in the concerns of primary education and content and transaction approaches of curricular areas. The emphasis should be on updating the knowledge and skills in classroom management.

The stress over the achievement of children in terms of scores has spoiled the charm of education While the children are overloaded with the curricular work, parents are worried about the achievement of children, the teachers are not well equipped to meet the challenge. Therefore, the demand of the hour is to create awareness among teachers about the achievement of children and make learning joyful

The various agencies and NGOs should work in coordination. The resources allocated by the central and state governments for updating the teachers are to be pooled for better results. The success of the inservice education programme should be judged by the achievement of teachers.

The results of the study clearly indicate that the teachers do participate in the inservice education programme with vigour and zeal. It was observed during the study that many teachers participated in the programme with high motivation. The inadequate infrastructural facilities at DIET-training centres create dissatisfaction and frustration among the participants. Many teachers found the resource faculty inadequately equipped in knowledge and skills. Therefore, NCTE needs to design, develop and implement inservice education programme for DIETs faculty first. Further, the inservice education programme should be made more attractive and fruitful. The use of ETV material is to be promoted in the programmes

The concept of accountability is to be injected in the inservice education programme. The performance of course director and resource faculty has direct bearings on the programme. The organising agency should be responsible for proper planning and providing infrastructural facilities. The state cannot escape from its accountability. During the study it was observed that the state was not able to supply even the mathematics kit to a DIET or the DIET was not able to procure a mathematics kit. Who should be held responsible and accountable for the loss? As a result the quality of training programme has suffered. The time has come to monitor the equitable distribution of resources with accountability. Primary teachers are also expected to participate seriously to attain mastery level. A few teachers were not able to improve their achievement The subjects require special attention of the research workers for further study.

SCIENCE RELATED VALUES

Curiosity, quest for knowledge, objectivity, honesty and truthfulness, courage to question, systematic reasoning, acceptance after proof/verification, open-mindedness, search for perfection and team spirit are some of the basic values related to science. The processes of science, which help in searching the truth about nature and its phenomena are characterised by these values. Science aims at explaining things and events. Therefore to learn and practise science :

- Be inquisitive about things and events around you.
- Have the courage to question beliefs and practices.
- Ask 'what', 'how' and 'why' and find your answers by critically observing, experimenting, consulting, discussing and reasoning.
- Record honestly your observations and experimental results in your laboratory or outside it.
- Repeat experiments carefully and systematically if required, but do not manipulate your results under any circumstance.
- Be guided by facts, reasons and logic. Do not be biased in one way or the other.
- Aspire to make new discoveries and inventions by sustained and dedicated work.

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